final report

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Assessment of the extent and capacity of goatmeat industry supply chains

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Abstract

The development of the Australian goatmeat industry is constrained by an inability to supply a consistent quantity and quantity of goatmeat, particularly with the high value goatmeat market. This project conducted a review of goatmeat supply chains, through their participants, to establish a better understanding of industry development and capability and quantify requirements for supply chain development assistance. A number of reports, media pieces and internet texts were reviewed in order to understand the current situations with goat supply, the supply chains that they move through, systems at each point, and their impact on the supply chain as a whole. Utilising the information collected, along with interviews with other stakeholders, a survey was then conducted to review and understand the attributes of former and current goatmeat supply chains. The research clearly shows the industry, by its sheer nature, is opportunistic, whether it is harvesting goats, using goats for weed control or slaughtering of goats when kill space is available. Larger processors have developed systems to manage goats all year round when they can obtain them and are sending price signals through grids. The research is unequivocal in showing that suppliers crave more information on a range of areas, processors want security in supply through information “feed forward” from suppliers, and industry is looking for more information on how product is moving through the supply chains. A change needs to occur from a “supply chain” approach to a “value based” approach. In practical terms, this means moving from just suppling a product to now delivering value through the supply chain to participants. This value may include programs such as data development and interpretation, extension and marketing programs, cooperatives, producer groups or combinations of these. Implementation would lead to greater information development and sharing, which the industry sorely needs.

Executive summary

The Australia goatmeat industry is primarily supplied by goats derived from rangeland production. A smaller, specialised domestic goatmeat production sector complements this larger, predominantly commodity market. The development of the Australian goatmeat industry is constrained by an inability to supply a consistent quantity of goatmeat, of a consistent quality, particularly with the high value goatmeat market. This project conducted a review of goatmeat supply chains, through their participants, to establish a better understanding of industry development and capability as well as to quantify the need for supply chain development assistance. The outcome of this research is to identify the characteristics which contribute to the success or otherwise of supply chains.

A number of reports, media pieces and internet texts have been reviewed in order to understand what the current situations are with the supply of goats, the supply chains that they move through and the systems at each point, and their impact on the supply chain as a whole. Utilising the information collected within the desktop survey along with interviews with MLA and other stakeholders, a survey was then conducted to review and understand the attributes of former and current goatmeat supply chains. This was done through the use of set questions within an online survey program. Further to this individuals were selected for phone interview to understand some of the specific supply chain issues.

It is clear from the research undertaken that the supply chains that manage goats are simple in nature. This is due mainly to the large amount of rangeland product supplied. Depots are used to aggregate and draft animals and in some instances hold animals back till they reach saleable weight. Domestic production is slightly more complex, with a much smaller market with a great deal more specification. These specifications include age of the animal, weight and fat cover as the domestic trade animal is utilised more in the cuts based market**.** Processors are well linked to either an agent or depot to purchase product, leaving them once removed from production. The supply of goats within Australia comes with a number of issues as well. These have been articulated within the research however can be simply summarised as:

- Supply
- Consistency
- Information (Communication)

As part of the research, the consultants has looked at the program that has been undertaken by PIRSA in value chains within the agricultural industry (Primary Industries and Regions South Australia, 2014). The consultants are of the opinion that, as a commodity product for the bulk of the industry, there are some areas of the "value chain" process that are not applicable within goat industry supply chains. However, the key areas of value within this approach are in the areas of value chains, customers and value chain analysis. This type of analysis will assist in providing information on ideas and options on how to add value, where value can be added, what form this value will be and how best to maintain the value chain. The analysis would be designed to answer these questions so as to allow development of a value chain.

In order to keep pace with other protein supply chains as well as meet the recognised needs of the industry, (based on industry feedback within the research), the consultant recommends the industry move from a "supply chain" approach to a

“value based” approach. In practical terms this means moving from just suppling a product to now delivering value, in all forms this takes, through the supply chain to participants. The research is clear in showing that suppliers crave more information on a range of areas, processors want security in supply, through information “feed forward” from suppliers, and industry and its researchers are looking for more information on how product is moving through the supply chains. This would include programs such as data surveys, extension and marketing programs, cooperatives, producer groups or combinations of these. Implementation would lead to great information development and sharing, which the industry sorely needs. As an example, a specific marketing group can ensure processors capture market share whilst empowering producers with information on product development which in turn increases productivity and returns for producers.

The outcomes from this research points to the benefits of the development of a value chain analysis of the industry, as a follow up the overall understanding of the supply chains within Australia as from this project, to learn how value can be added to these through research and development, extension, data, information flows and transparency.

The recommendations provided, if undertaken, together with this research and outcomes from SA Pastoral management work, can then link into industry based work such as the Goatmeat RD&E strategy of MLA to then deliver real benefits through the goatmeat supply chain.

1. Recommendation – That Meat and Livestock Australia investigates the impact on supply chains on the issue of weather and the seasonal management of harvested as catalyst to improve or balancing supply
2. Recommendation – That Meat and Livestock Australia investigate the key quality attributes (in addition to weight) that both producers and processors want and need. MLA would develop a specific goat industry “Feedback/Forward Program” of this data. This may include another system within the MLA “Livestock Data Link” program
3. Recommendation – That Meat and Livestock Australia develop a series of workshops, in collaboration with processors, on product development, marketing and market access. The workshops will be designed for processors to invite key suppliers to provide an understanding of what happens with their product and stimulate stability or change within their supplier’s production businesses, to suit the desired outcomes of processors. (This may be undertaken as a Processor Initiated Project (PIP) or developed through the MLA Donor Company
4. Recommendation – That Meat and Livestock Australia undertake a value chain analysis within the goat industry, one for rangeland production and one for farmed meat goat production. This program should look to what do each individual business do in affecting the product at each stage in the chain, identify how well information flows from the consumer all the way back to the primary producer (linked to Recommendation 1) and investigate relationships businesses have with their customers, and their suppliers.
5. Recommendation – That the Rural Solutions work be added to the Value Chain Analysis with a specific outcome designed to present the value proposition to the SA Pastoral Board

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1 Background

The Australia goatmeat industry is primarily supplied by goats derived from rangeland production. A smaller, specialised domestic goatmeat production sector complements this larger, predominantly commodity market. Surplus goats from the fibre and dairy sectors also contribute to total goatmeat supply. The development of the Australian goatmeat industry is constrained however by an inability to supply a consistent quantity of goatmeat of a consistent quality.

1.1 Project objectives and outcomes

PROJECT OBJECTIVE	ACHIEVED	BROAD OUTCOMES
1. Complete a comprehensive review of the current and former goatmeat supply chains within Australia over the past 10 years, including commodity supply chains (rangeland and by-products), and niche goatmeat supply chains, (both domestic and international) focussing on defining features including: a. *Industry footprint and distribution of economic activity in the goatmeat production in each state of Australia where goatmeat is sourced* b. *Chains directory of goat meat industry chains including producers and harvesters/stakeholder organisations, traders and depots, abattoirs, meat wholesalers, traders and consolidators, boning rooms, importers and end-users* c. *Product specifications* d. *Procurement systems* e. *Geography* f. *Transport and logistics* g. *Demand end of the these supply chains and end customer product use (secondary cuts, manufacturing product)* h. *Sales strategies (branding, cuts vs. diced)* i. *Industry support systems* j. *Industry statics availability and forward planning programs*	Partially achieved	• Unfortunately this objective was only partially completed. This is explained further in the document. • Review of supply chains completed through a process of Desktop review and Industry survey, to be found in Section 2 of this report • Sectors researched and surveyed were producers, depots, processors as well as other groups post processing, however only producers, depots and processors responded. • Key areas investigated included the impact of goat production within geographical regions within Australia (most notably in Rangeland areas of NSW), how goats are traded within Australia, what feedback is available, how is data created and collected, averages including transport distance, outlines of weaknesses within the trade and where can institutions assist industry
2. Identified the key roles played by some types of organisations in consolidating supply and collating and disseminating information through goatmeat chains including: a. State and federal government agencies and regulatory bodies responsible for registering and administering regulations (e.g. registration of depots and abattoirs, the role of SA pasture board) b. The influence of key NRM bodies and	✓	• Roles and responsibilities, both current and required, were reviewed and outcomes articulated within the research (Section 2), including what research institutions had currently done as well as the industry view on what institutions should undertake

NGO's in this process		• An understanding of the role of regulators within supply chains as well as the impact of regulations, especially in SA. • The issues of relationships between industry and RDCs, most notably MLA
3. Categorised supply chain features and measurement of success utilising an agreed supply chain "attribute model". The model to allow supply chains to be objectively compared and assessed	✓	• Interpreting collective research to understand and quantify supply chain characteristics, strengths and weaknesses (Section 3) • Comparison between two main industry supply chains, being "rangeland" and "farmed". • Assessment of both supply chains to understand opportunities for process improvement by understanding what supply chain participants desire
4. Identified and analysed successful supply chain attributes and the supply systems used to manage them	✓	• Analysis of how to improve on successful supply chains, whilst also assisting with key issues within struggling areas (domestic supply of quality product) through use of value chain analysis and development, to meet the agreed and understood outcomes sought by industry.
5. Definition of "model" supply chain attributes for different supply chain systems within Australia (i.e. farmed vs. rangeland; domestic vs. export) that would further industry development	✓	• Delivery of recommendations to further industry development based on desired industry outcomes in the area of value through information.

2 Methodology

This project conducted a review of goatmeat supply chains, through their participants, to establish a better understanding of industry development and capability as well as to quantify the need for supply chain development assistance.

For the purpose of the project, a supply chain was defined as the situation where a repeatable and integrated supply arrangement (formal and informal) has been negotiated between at least two supply chain participants with the supply chain participants considered to be livestock producers, processors, wholesalers, value adders, distributors and/or retailers. To this end no value adders, distributors or retailers took part in this review due to unavailability at time of research and/or were no longer stocking or using goatmeat. This was due to no call backs or interest from retailers and no value adders actually wanting to be a part. Further, the last supermarket that took part in national goat product supply (this lasted only 6 weeks) was Franklins, which has been bought out and staff that worked on that project no longer working in the merged business. It also should be noted that respondents were not asked to notify who they supplied, or who their suppliers were.

A desktop review on current materials available was first conducted to provide an outline of issues against an agreed range of parameters within the industry (further outlined in section 2). This desktop review's findings were then collated into a single point of reference on issues raised in public media, fora, research papers, interviews and corporate information, both papers and website information.

The desktop reference material was used to develop a series of survey based questions designed to be utilised within an online survey. Targeted groups for this survey were agreed with former Goat Industry Development Manager at Meat and Livestock Australia (MLA) Felice Driver. This process was delayed until access to the "Goats on the Move" e-newsletter members was released. Further to this group other specific targets within the goat industry were highlighted, and these were followed up with a direct phone survey to verify information already collected and expand on specific areas. Strengths and weaknesses as well as industry issues were collated.

All information was then reviewed to develop model supply chains for the industry to assist with recommendations for further work and development. Key to this was looking at where gaps lay within supply chains in whatever form and look to research and develop key opportunities for MLA to provide assistance.

The outcome of this research is to identify the characteristics which contribute to success or otherwise of goatmeat supply chains and most importantly provide a blue print to support future supply chain development initiatives, both privately and publicly funded.

3 Findings

3.1 Desktop review

3.1.1 Introduction

A number of reports, media pieces and internet texts have been reviewed in order to understand what the current conditions are with the supply of goats, the supply chains that they move through and the systems at each point, and their impact on the supply chain as a whole. Other texts that have been reviewed include information regarding other supply chains globally and goat marketing papers from overseas markets.

3.1.2 Overview

There are a number of key elements within all literature that was reviewed regarding goat supply chains, in Australia and overseas, both farmed goat and rangeland. These elements are as follows:

- Rangeland Harvest
- Regulation Impact
- Domestic Market
- Supply Issues
- Industry Aspiration
- Current Supply Chains
- Data
- Economics
- Welfare
- Product Quality
- Product Specifications

Under each of these elements, a range of observations, quotes, opinions and report recommendations have been outlined regarding supply chains issues linked to the element. The purpose of this is to ascertain where the key recurring issues are (be they positive or negative) to then develop an issues matrix to review against the outcomes of industry surveys undertaken.

The desktop review observations, quotes, opinions and report recommendations can be found in Appendix 1 (all citations can be referenced in the Bibliography on page 36 and includes MLA R&D summarised as part of the methodology). The recurring issues can be found below:

ELEMENT	ISSUES
Rangeland Harvest	• The industry continues to evolve from an opportunistic venture to a mainstream business, however this is slow • The need still exists to quantify the link between harvesting and environmental outcomes • Income from harvesting goats sustains many rangeland/pastoral businesses in times of income stress on larger farm sectors such as wool
Regulation Impact	• Regulation on rangeland goat management in South Australia's Pastoral Zone is not reflective of the research into rangeland goat management in other states • Some regulation within the industry is necessary to manage those entering and exiting the industry in an opportunistic fashion including depots
Domestic Market	• There is limited research into how a mixture of rangeland and farmed goats could meet the domestic market requirements. As an example to this, within Appendix 1 under this heading, writers such as (Ferguson, The Australian Rangeland Goat - Management and Opportunities, 2010) note that there

	needs to be more research into the opportunity for smaller rangeland goats within this market as this is an opportunity to increase confidence with producers as well as add volume to the market and underpin welfare for these class of rangeland goats. • Supply of quality Boer goat for premium markets continues to hinder market growth • A quality product export market cannot be serviced whilst industry cannot maintain a strong domestic market
Supply Issues	• Weather will always be a factor in supply of rangeland goats. This needs to be researched. The seasonal management of harvested goats requires research and industry extension • Supply on the domestic market is inhibited by ability to manage Boer goat production year round. These need to be "marketable" sized mobs • Supply will increase if producers see goats as a viable "third" farming options on livestock based farms, there is an opportunity for more producers to begin 'growing out' smaller, unmarketable animals captured during harvest until they are market ready
Industry Aspiration	• Striving for profitable supply chains for all sectors within it must remain the key aspiration for industry
Current Supply Chains	• There are two main supply chains, emanating from the rangeland and farmed goat systems • Processing plant locations don't correlate with location of goats, especially rangeland animals • Marketing Australian goat meat is restricted by limited and seasonal supply, especially for farmed Boer goats • Depots provide a great service to harvesters and buyers in the management of goats, including drafting based on specifications and the opportunity to hold stock
Data	• Broad industry data for the industry is limited, especially in the domestic market in areas such as kill numbers. Whilst information regarding goat prices and export data is available, authors cited in this report such as (Day, 2012), (Pedler, 2012) and (Ferguson, The Australian Rangeland Goat - Management and Opportunities, 2010) note a paucity of data across a range of areas including domestic slaughter numbers and production, cost of production data and feral goat numbers as examples of where data must be improved. • Benchmarking within industry is non-existent due to limited available data, especially for farmed goats on issues such as cost of production and internal pest management • Hard to gather data on rangeland goat populations and spread
Economics	• Lack of data on supply chain profitability • There are cost advantages when processing goats of similar weights, sex and age
Welfare	• Transport of goats from rangeland areas remains an

	area of "exposure" for the industry • Rangeland goats can suffer from major stress related issues, therefore sound management strategies are required • There are departmental developed Standard Operating Procedures (SOPs) for harvesting of Rangeland goats
Product Quality	• Better nutrition for goats will provide product quality improvements. The literature research pointed to producers needing a greater understanding of nutrition of goats to ensure that better conformed goats are available with more regularity (McMillin K. W. and Brock, 2005). This also sends a message through to producers to manage this for better returns rather than utilisation just for weed control (Cripps, 2013). Therefore, there is opportunity to link information feedback and value chain management to product quality by showing through feedback within supply chains the benefits of better nutrition. This can be underpinned utilising information already gathered by MLA through the B.GOA.0055 *Goat nutrition in Australia - Literature review*. This report concluded that the main literature within the nutritional and energy requirements of small ruminants need to be understood further by field trials. Once this was done there would be the opportunity to develop nutritional guidelines for use mainly by the farmed goat industry (Jolley, 2013) to then assist improved product conformity • An understanding of quality measures (fat and muscle conformation, meat colour) by producers, through specifications and quality systems at slaughter, is vital for product quality
Product Specifications	• Drafting by specification allows for better management of supply • Specifications on domestic market vary which leads to supply shortfalls as available goats do not meet requirements

Recommendation – That Meat and Livestock Australia investigates the impact on supply chains on the issue of weather and the seasonal management of harvested as catalyst to improve or balancing supply

3.2 Industry survey

The consultants used the outcomes of the desktop survey to provide the platform in question development for the online industry survey. Utilising the information collected within the desktop survey (issues matrix) along with interviews with MLA and other stakeholders, the survey was conducted to review and understand the attributes of former and current goatmeat supply chains. Further to this individuals were selected for phone interview to understand some of the specific supply chain issues. The outcomes of the phone surveys will be reviewed separately to the "all of industry" online survey results.

3.2.1 All online respondents

The online survey to the goat industry targeted the following supply chain sectors:

- Livestock producer - 78
- Transporter - 0
- Depot operator - 3
- Processor - 6
- Wholesaler - 0
- Government agency, Consultant - 2
- Other - 3

None of the retailers, distributors or value adders contacted as a part of this project wished to take part in the survey.

The survey was then tailored to each sector but each survey had similar themes, looking at:

- Length of time in the industry
- Reason you're in the industry
- Amount of goats/goatmeat managed
- Distance product moves
- Providing and receiving Feedback
- Providing and receiving Assistance

The key information from this section of the survey is:

- 45% of all respondents were from NSW (Figure 1)

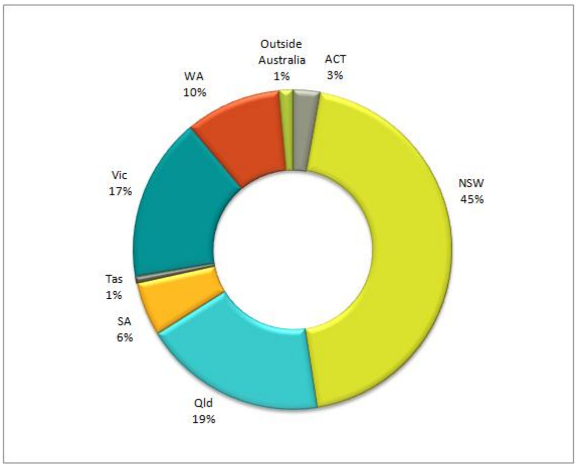

Figure 1: Location of all respondents

- Locations of processors did not correspond with the location of producers (Figure 2)

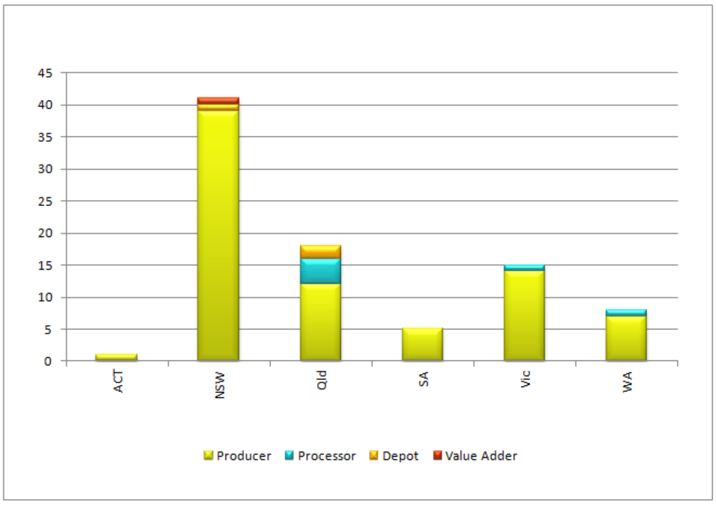

Figure 2: Comparison of location of supply chain participants

- Of those that were no longer in a supply chain, 54% left or were not part of a chain as they were unsure how to access or join a supply chain (Figure 3)

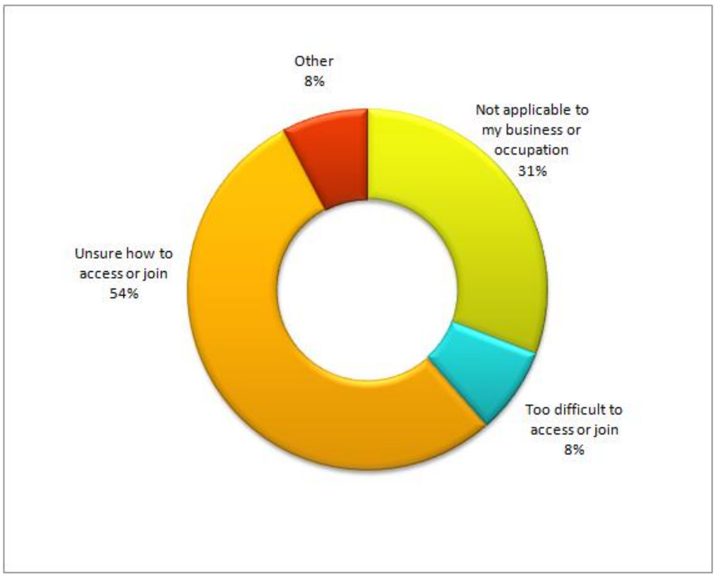

Figure 3: Reasons for no involvement (n=13)

- 69% of respondents have been in a goat supply chain for 5 years or more (Figure 4)

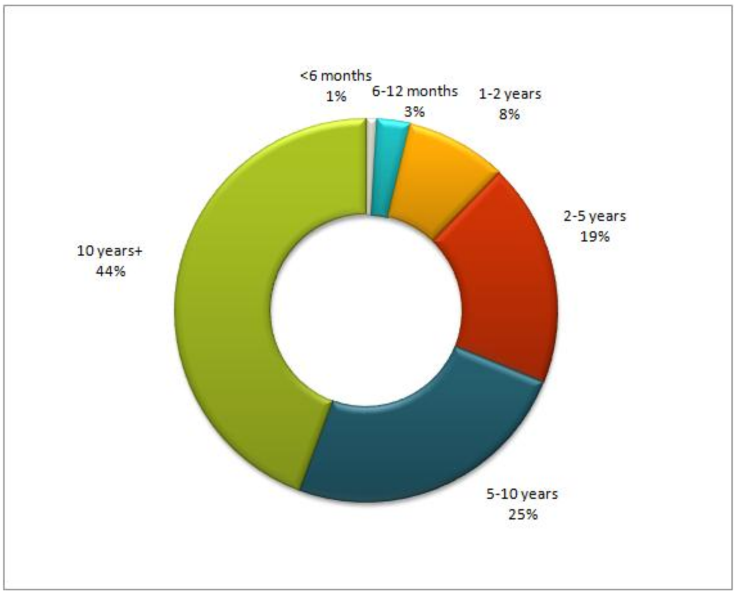

Figure 4: Length involvement in the goatmeat supply chain (n=106)

3.2.2 Producers

Within the online survey structure, once a respondent nominated they were a producer and completed initial information as per the above, they were then delivered to the producer section of the survey. Questions were developed in order to understand:

- Length of time involved in goat meat supply chains
- Reasons being in goat meat supply chains
- Numbers consigned in the last 10 years
- Supply specifications for goats transacted
- Average distance that animals have travelled from property(s) to the next stage in the supply chain
- If respondents only harvested feral goats on property (i.e. not actively managing goats by fencing, nor breed or purchase of goats)
- If respondents did more than harvest goats, such as actively managing goats (i.e. by fencing etc) on property and what percentage are actively managed
- Feedback regarding consigned animals, what feedback was provided and was it useful and does it assist in better work within supply chains?

The key information from this section of the survey is:

- 50% of producers were from NSW (figure 5)

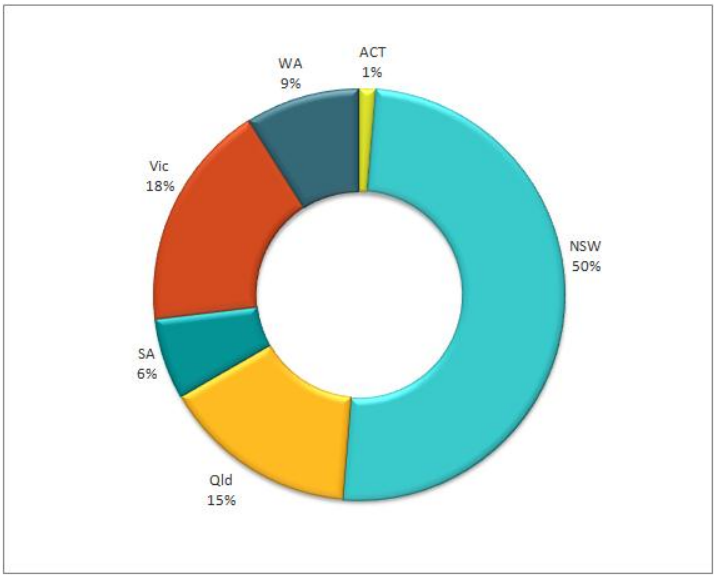

Figure 5: Location of goat producers (n=78)

- Question four was an open text question as to why the respondent originally became involved in a goatmeat supply chain. The full responses are provided in Appendix 2 but in general the reasons producers became involved in goats can be categorised as:
  - Clean up paddocks, woody weeds
  - Accessible supply of rangeland goats/feral goat control
  - Goats surplus to requirements (cast for age, by-product of fibre/dairy enterprise)
  - Diversification (spread risk, run in conjunction with cattle and/or sheep)
- Question nine asked producers what were the important factors that contributed to their continuation of involvement in supply chains (Figure 6). This was an open text question as to other factors that have contributed to the continuation of their supply chain. The full responses are provided in Appendix 3.

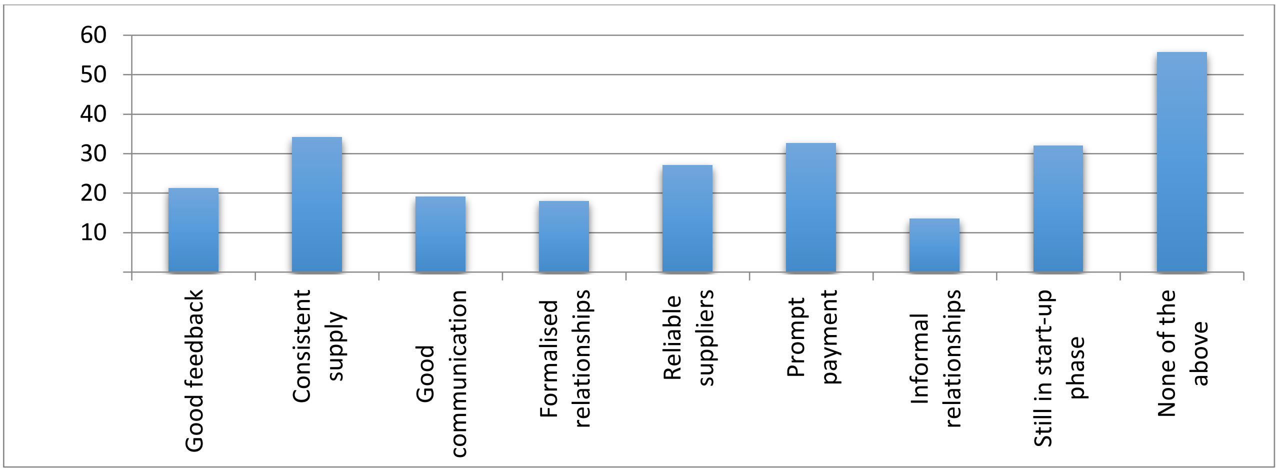

Figure 6: Importance of factors that contribute to continuation of involvement in supply chains

- 70% of those producers that harvest and manage goats are actively managing goats which includes keeping them behind fencing, drafting and sorting and breeding (Figure 7)

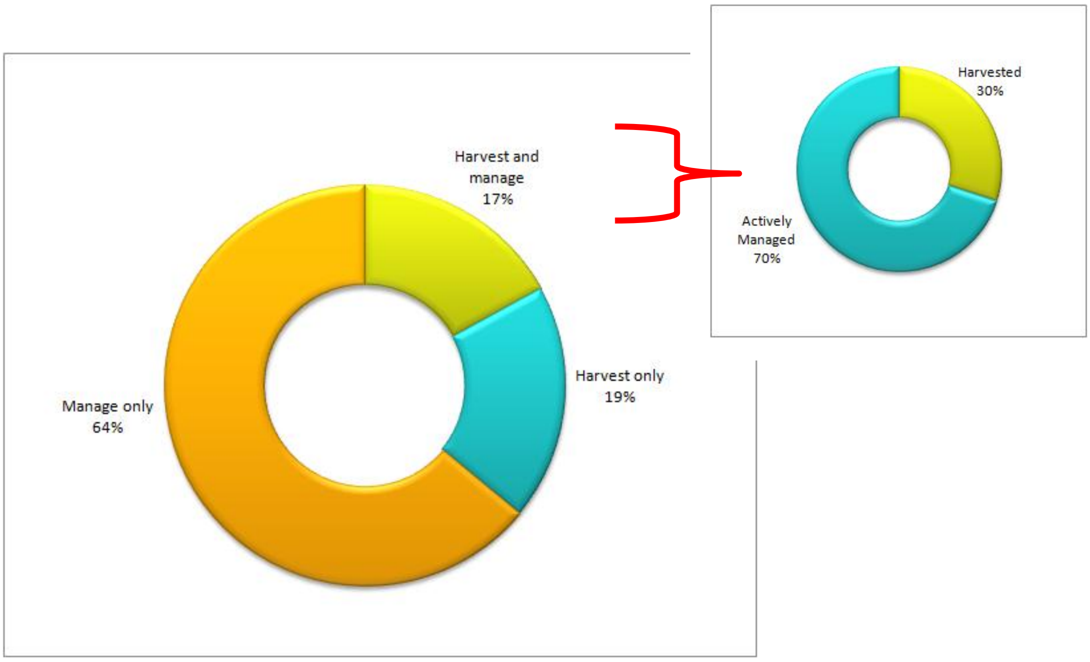

Figure 7: Active management vs harvesting (n=78)

- Over 25% of respondents were consigning 1,000 head or more of goats per year and 25% of respondents were consigning no more than 100 per year (Figure 8)

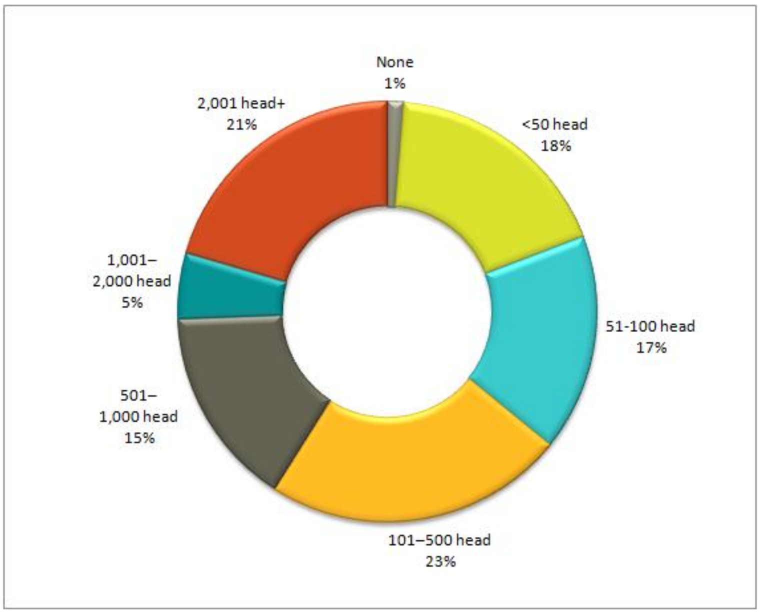

Figure 8: Number of animals consigned by producers per annum (n=78)

- The main market specifications that respondents were meeting were live weight and carcase weight (Figure 9)

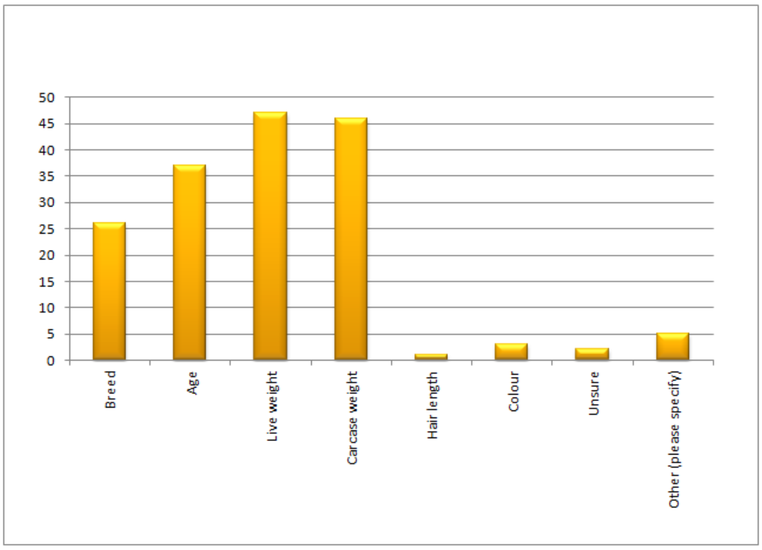

Figure 9: Specifications (n=78)

- Over 70% of respondents were transporting goats 100 kilometres or more, with 22% of the total transporting goats between 500-1000 kilometres (Figure 10)

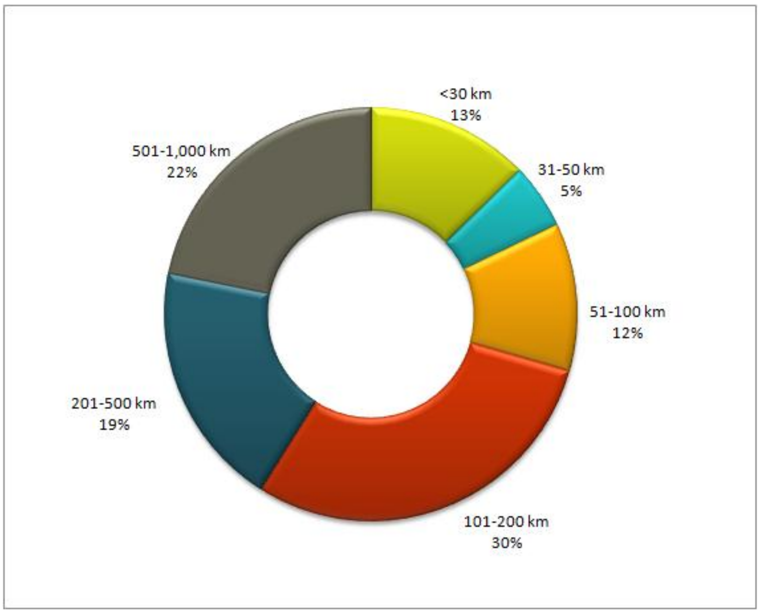

Figure 10: Average distance live animals travel from producer to next stage in supply chain (n=78)

- Figure 11 is a comparison between the type of feedback received and the length of time the producer has been in the supply chain. As can be seen from the graph, as time elapses, the type of feedback changes. This would suggest that when producers are first involved in the supply chain, feedback is based on average carcase weight and yield. As they become more involved these topics continue to remain important, however other feedback areas open up. Feedback subjects such as numbers condemned, proportion of no commercial value (NCVs) and animal condition become more important the longer a producer remains in the supply chain. This is likely due to producers initially endeavouring to get a handle on what impacts growth rates (and therefore carcase weight and yield) and once they have mastered that they turn to other (and often less obvious) areas they can improve upon.

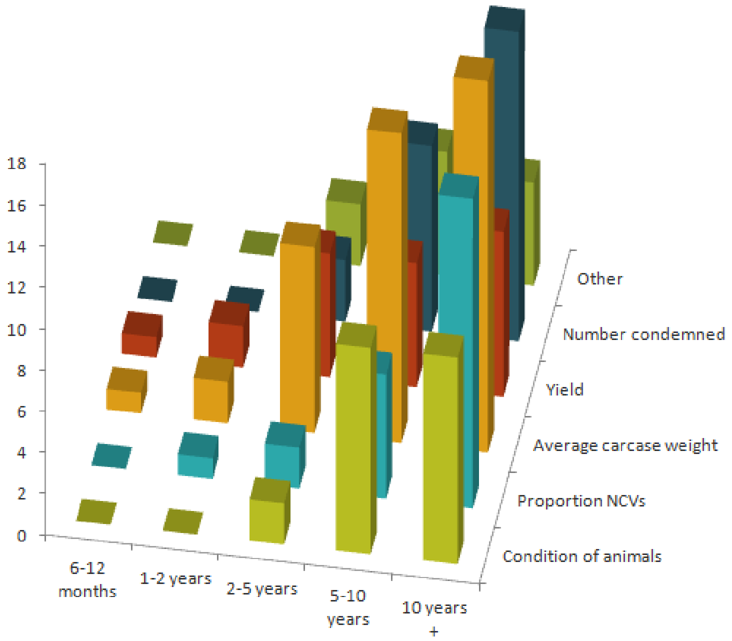

Figure 11: Type of feedback received by producers compared with time in the supply chain (n=78)

- 70% of respondents found feedback very useful (Figure 12)

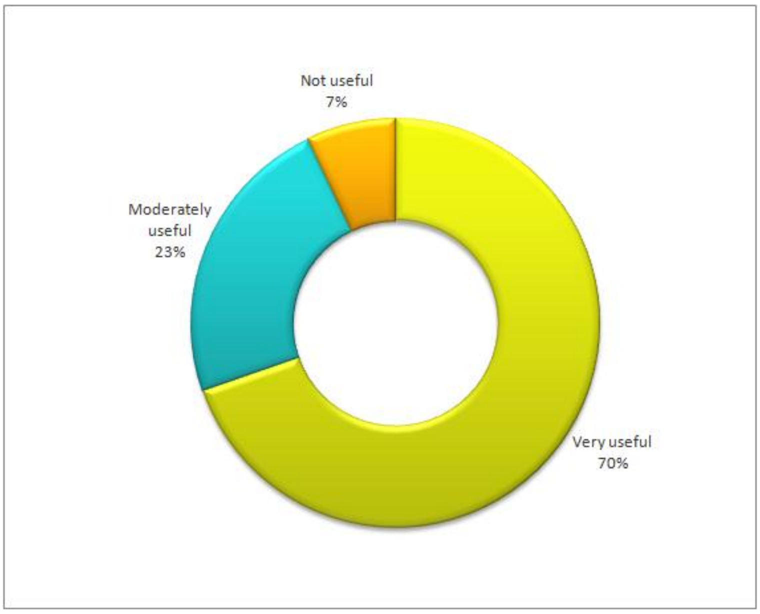

Figure 12: Usefulness of feedback (n=56)

- Question 49 was an open text question as to what feedback would help them to better work within supply chains and 56 responses were received. The full responses are provided in Appendix 4 but generally can be categorised as:
    - Weights (kill weights, live weight, carcase weight)
    - Yield/dressing percentage (including yield differences between sex etc.)
    - Reasons for condemned carcases
    - Quotas
    - Advanced notice of specifications
    - Time of kill

  - Fat levels
  - Meat quality

- Question 50 was an open text question as to any particular skills that would help you to better work within your supply chain and 56 responses were received. The full responses are provided in Appendix 5 but the main themes raised were:

  - Estimating weights/yields/scoring by sight (i.e. without scales)
  - Producing more consistent animals over dry periods
  - Understanding of entire supply chain - through to slaughter

- Question 52 was an open text question asking respondents to elaborate on how they have connected others to supply chains, what they did, how they helped, the process etc and 48 responses were received. The full responses are provided in Appendix 6 but the main themes raised were:

  - Contacts (mainly of buyers)
  - Specifications
  - Prices

3.2.3 Depots only

Three depots responded to the survey. Of these, one was based in NSW and the other two were in Qld. All three have been involved in goatmeat supply chains for more than 10 years. Survey numbers vs. numbers of depots within Australia is impossible to quantify as there is no list of depots within Australia (this may change with a dedicated “depot” status to be uploaded to the NLIS database, but the final system for this is still to be agreed to by the NLIS Sheep and Goat Advisory Committee and SAFEMEAT). Questions to depots were similar in nature to those posed to producers.

The key information from this section of the survey is:

- Question four was an open text question as to why the respondent originally became involved in a goatmeat supply chain. Responses from the three depot operators were:
  - "Goat buying Depot and contract goat mustering. So we have marketed goats to meet works."
  - "To diversify from an income stream totally dependent on wool and a belief that with an increasing world population the demand for meat would be more sustainable than for wool. I was also interested in their ability to control woody weeds and better utilise paddock feed in a mixed grazing operation."
  - "Opportunity to diversify from sheep & cattle production removal of rangeland goats from grazing property"
- Consistent supply and prompt payment were the main factors that ensured continuation of supply chains (Figure 13)

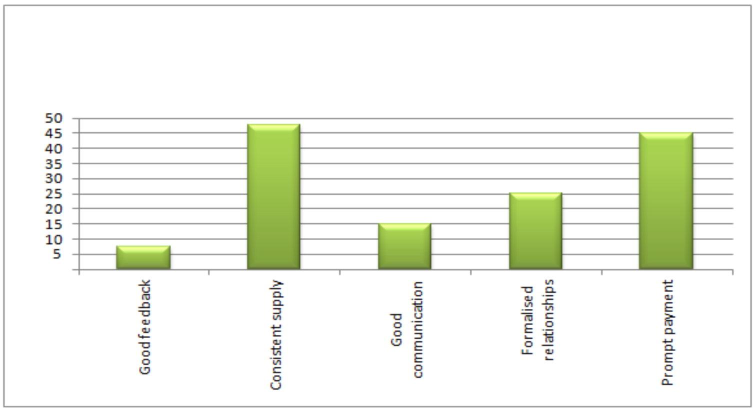

Figure 13: Factors that contribute to the continuation of supply chains (n=3)

- Participants were also asked if there were other factors that have contributed to the continuation of their supply chain and answers were:
  - "Prices paid"
  - "Consistent quality leading to customer satisfaction brings return business"
  - "climatic and seasonal changes i.e. weather"
- Two out of the three respondents consigned over 2,000 goats in a year (Figure 14)

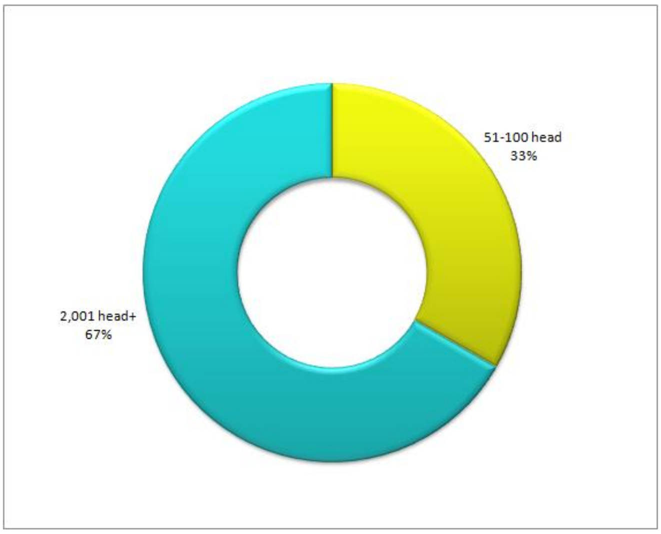

Figure 14: Number of goats consigned within supply chains in the last year (n=3)

- All depot operators that responded indicated that they receive feedback after consignment. The type of feedback received was:
  - "Kill feedback"
  - "requirements being met or not met"
  - "carcass weights"
  - "condemn reports"
- Of respondents, 33% found this feedback very helpful while the remaining 67% found the feedback moderately helpful. One depot indicated dressing weights would be valuable feedback to receive.

- Question 50 was an open text question asking participants to list any particular skills that would help them to better work within their supply chain. Responses from the three depot operators were:
  - "Drafting prior to trucking to sort out different weight animals"
  - "Any tool that could link potential customers to our already established supply arrangements, especially small orders of high quality domestic product"
  - "unsure"
- Question 52 was an open text question asking the respondent to elaborate on how they have connected others to supply chains, what they did, how they helped, the process etc. Responses from the three depot operators were:
  - "Drafting goats prior to trucking, knowing the groups wanted by meat works"
  - "By contacting a producer who had goats suitable for the domestic trade and organising delivery to slaughter when due to ignorance their plan was to supply to an export facility which currently is offering an inferior rate for that category of animal"
  - "sourced producers"
  - "instigated communications between producer and abattoir"
  - "operate depots to enable smaller producers to supply numbers that would not readily be accepted by abattoirs"

3.2.4 Processors

Within the online survey structure, once a respondent nominated they were a processor and completed initial information as per the above, they were then delivered to the processor section of the survey. Questions were developed in order to understand:

- Length of time involved in goat meat supply chains
- Reasons being in goat meat supply chains
- Volume consigned in the last 10 years
- Average distance that product has travelled from plant(s) to the next stage in the supply chain
- Information regarding consigned product
- Information and/or skills to assist supply chain improvement

The key information from this section of the survey is:

- Two thirds of respondents were from Queensland (Figure 15)

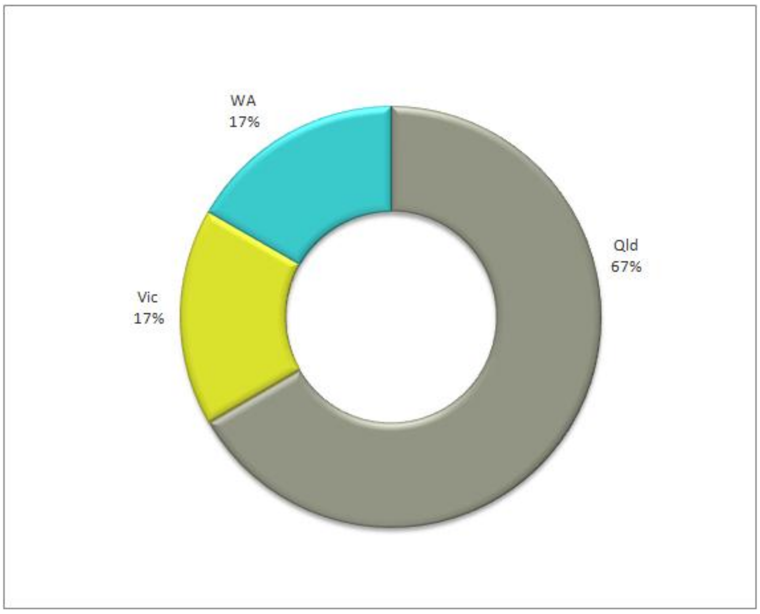

Figure 15: Location of processors (n=6)

- Question four was an open text question as to why the respondent originally became involved in a goatmeat supply chain. The reasons processors became involved in goats can be categorised as:
    - Passion for the development of the Industry. Family pastoral properties where goats had been a significant contributor to financial well-being of the business.
    - Company I work for is part of the supply chain.
    - To make money
    - Key exporter to overseas market
    - For a Job
- Two thirds of respondents have been in the industry for 10 years or more (Figure 16)

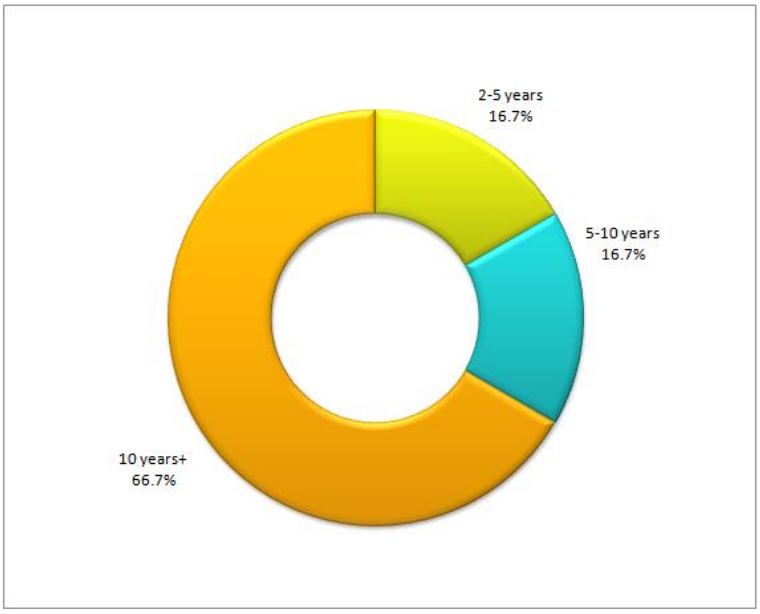

Figure 16: Length involvement in the goatmeat supply chain (n=6)

- Question nine was an open text question as to other factors that have contributed to the continuation of their supply chain. Processor responses were:
  - Market development, improved production productivity
  - Workers available for processing

- Two thirds of respondents stated goats travel 500 km and over to reach their facility (Figure 17)

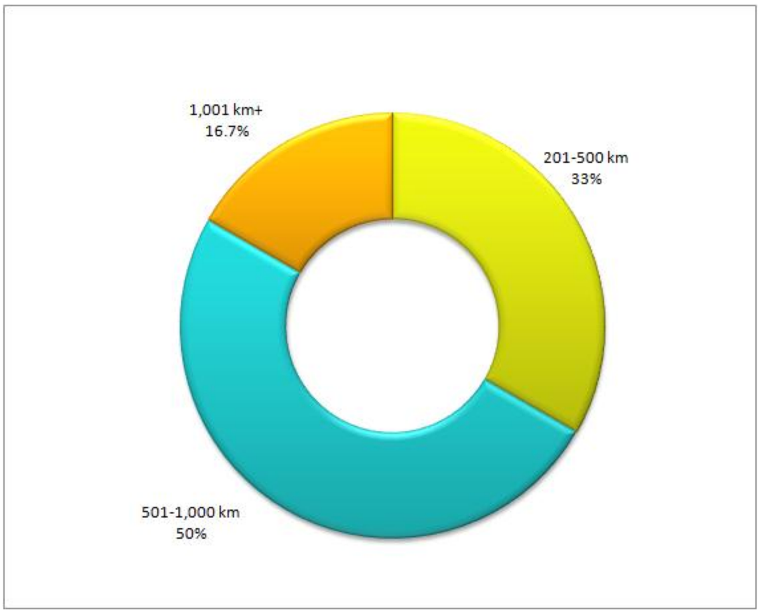

Figure 17: Distance goats are transported to processor (n=6)

- All processors that responded indicated that they receive feedback after consignment. The types of feedback included:
  - "Weight - discrepancies with spec."
  - "Inconsistent delivery of live animals leading to delays in delivery of processed meat to market."

- Of respondents, 67% found this feedback very helpful while the remaining 33% found the feedback moderately helpful. In terms of feedback that would be useful, processors indicated the following:
  - "Improved supply predictions from producers."
  - "Improved state government bureaucratic regulations to promote advancement of the goat industry rather than hinder i.e. fencing regulations on rangeland goats within agricultural areas."

- Question 50 was an open text question asking participants to list any particular skills that would help them to better work within their supply chain. Responses from the processors were:
  - "Cost of production tools for producers to then allow us to provide improved market signals for quality grades on a weight and grade basis."
  - "quality"

- Question 52 was an open text question asking the respondent to elaborate on how they have connected others to supply chains, what they did, how they helped, the process etc. Responses from processors were:
  - "Liaised with supply chain participants to develop market opportunities, industry resources and strategies. Facilitated opportunities for Industry and participant development. Delivered Industry research and development programs at a national level."
  - "opening up new markets"
  - "Putting them in contact with others"
  - "China trade show”

Several comments were also made throughout the processor survey questioning where MLA funds are being invested and the need to ensure adequate funds are re-invested into further developing rangeland goat productions, as that is where the majority of production is sourced from.

3.3 Phone survey

As part of the online survey (Section 2.2), respondents were asked if they would consider being contacted to ask further questions regarding goatmeat supply chains. A list from those that stated they were happy to be contacted was created. Cross referenced against this list was an industry “hit list” that was created, reviewed and approved by Meat and Livestock Australia. People on this list were contacted with the bulk responding as part of a phone survey. Some were not available or changed their mind regarding providing more information.

As per the online survey, although targeted to a large range of participants, the bulk of returns were from producers, depot managers and processors. At the time of the survey the consultants looked to undertake interviews with goat specific people within state departments. All states were contacted however not one had an actual dedicated goat person, rather individuals who had goats as part of a broader set of responsibilities or no one at all. QDPI had a trade manager who also specialised in goats, who completed the online survey and whose information at the time was deemed sufficient. The South Australian situation was being reviewed as a part of MLA project B.GOA.0101: Legislation and Regulations in South Australia Limiting the Profitable Production of Rangeland Goat Meat. At this stage, owing to funding for the project, it was agreed between the consultant groups to concentrate on the outcomes provided by those operating daily within goat supply chains, being processors, depot owners and producers.

At the time there was no dedicated MLA resource for goats to discuss supply chains within industry. Again, owing to funding for the project, it was again decided to remain with the outcomes obtained from active participants within the industry.

Questions were developed to specifically follow on and gain more information from the online survey questions in the following areas:

- The goatmeat supply chain(s) you have been involved in, including:
  - How many people/stages were/are involved?
  - What was your role/responsibility in the supply chain?
  - What was/is the final product(s)?
  - Do you know where the final product went/goes?
  - If yes, where did/does the product go?

  - What transport was/is involved?
  - What were/are the logistics of getting goats away from your property?
  - Did you get support from others in the supply chain and/or from others not in the supply chain in order to participate in the supply chain? (i.e. Govt, NGO's)?
  - If yes, what sort of support/help did they provide?

- The attributes that were/are important to the success of the goatmeat supply chains you have been involved in

- Important attributes of successful supply chains

- The attributes that limited/limits the success of the goatmeat supply chains you have been involved in

- Main impediments to establish supply chains

- Main impediments to maintaining supply chains once they are established

- Is there anything (information, skills, infrastructure – on & off property etc) that would help you to work with the supply chains you are currently involved with?

3.3.1 Producer phone survey

Sixteen producers from across 4 states were interviewed as per the above information. Two depot operators were also interviewed and as their responses were similar to that of producers, they were added into the producer summary. The full survey is located in Appendix 8.

The synopsis of the responses from producers is outlined below:

- A relatively large proportion of respondents don't know what the final product is (mainly the harvest producers).

- Most respondents worked out the supply chain options by themselves without support from external organisations such as MLA, Government agencies etc. This was through word of mouth, cold calling etc.

- Respondents consider there is a lot information available about animal husbandry and management, but not about supply chains, marketing and selling options.

- Respondents believe the key strengths of existing supply chains are strong demand, good relationships with others in the supply chain and goat meat being a quality product.

- Respondents believe the main weaknesses of existing supply chains to be freight and inconsistent quality (on farm factors) and inconsistent supply and lack of information about marketing/selling options (in the supply chain).

- Respondents believe the characteristics of effective supply chains are consistent supply, good communication/relationships and market/price differentiation (saleyards vs over the hooks, farmed vs harvested).

- Overwhelmingly, respondents think more information (real time) about marketing/selling options is needed so that they don't miss out on selling opportunities (this may also lead to improved price transparency and differentiation as it could increase the number of supply chain participants). Respondents also believe improved marketing (domestically) is needed and that depots/collective marketing for farmed animals would be beneficial. On farm, respondents are seeking improved drenching options and information about animal management and genetic improvement.

3.3.2 Processor phone survey

Seven processing plants were contacted via phone survey. Even though this number seems small, the capacity covered was large. Capacity represented by the survey equated to, on a 48 week operation time for the plants, about 1.3 million goats per year (smallest at 40 per week, largest at 8,500 per week). Noting that Australia slaughters approximately 2 million, this survey represented 65% of goat slaughter. The full survey can be found in Appendix 9.

Five of these processors were export and two were domestic. The main outcomes of the survey were:

- MLA has not helped them at all within the supply chain. They are looking for assistance in producer education on specifications

- SA processors keen to see lifting of bans on keeping of goats captured in pastoral areas

- Most are now bypassing depots unless they are of top management quality. Processors are accessing bulk direct from farm. The issue is that the link needs to be strong between depot and processor to ensure that the processor obtains what they want. Depots manage goats from a great number of resources whilst large producers have only one. The best depots are those that do not see themselves as a drafting gate rather they are an assembly and management depot that provides what the processor wants each and every time.

- Most are utilising Over the Hooks (OTH) trading ensuring drafting is occurring

- Most want to see a skin on program for access to China. Most see China as the new frontier

- Domestics want to see a better and consistent supply from Boer breeders

3.4 South Australia

Currently in South Australia, it is a contravention of the Natural Resources Management (General) Regulations 2005 (under the Natural Resources Management Act 2004) to manage feral goats. Within these regulations, feral goat management is controlled as follows:

Regulation 26 (3) Subject to sub-regulation (4) and regulation 28, a deer or goat on land without the consent of the owner or occupier of the land must— (a) be captured and removed from the land within 6 weeks after capture; or (b) be destroyed.

It is interesting that South Australia (SA) is the only state where this rule exists for the management of feral goats (See Appendix 7). This issue is perplexing considering in South Australia there is a high number of feral goats as a population and also given there is a large export abattoir processing goats, as well as smaller domestic abattoirs. Approximately 30,000 feral goats are shipped from the Adelaide International Airport annually to Malaysia. Whilst South Australia has the population and processing capacity to manage goats effectively, regulations ensure that goats cannot be managed through supply chains in the same manner as in other states (i.e. drafting for specifications from processors such as weight and/or age and/or sex).

Processors and/or their buyers made it clear that it is difficult to purchase goats in South Australia, at a time when nationally, the industry is booming, with Australian goat slaughter in 2013 reaching 2.07 million head the highest on record and production reaching 31,500 tonnes cwt, the highest on record (McRae T and Thomas B, 2014). In Appendix 9, the results from the processor survey provide the following comment from a buyer, buying for a Victorian export processor and South Australia domestic processor:

The issue remains in SA that we cannot manage slaughter goats in a commercial way, including the ability to store goats so that we can take them when they are at prime slaughter weight, as well as keeping nannies etc for breeding and further management.

As can be seen within Appendix 1 of this report, trials have been conducted in SA Rangelands and goats can be run as a managed enterprise in the rangelands. As part of the trial, the board issued a temporary permit to one pastoralist to stock domesticated goats in a controlled manner, in accordance with the board's Domestic Goats Policy (McBride, 2012).

At a recent meeting of industry and government within South Australia (Meeting Report, Appendix 10), it was mentioned that other states have been able to take advantage of this increase in market through deliberate systems of management of feral goats for profits in rangeland areas. Further, *"Based on the information provided, the Pastoral Board has the authority to change pastoral leases stocking rate capacity and land use management. It was resolved that a working group develop and provided a pastoral application and management plan to the Pastoral Board for the management and enlargement of an existing goat holding area for consideration. An application would be supplemented with a summation of outcomes from producer demonstration studies in Western Districts of NSW and a report from the domestic goat grazing study at Lilydale (as per (McBride, 2012)).*

MLA project B.GOA.0101: *Legislation and Regulations in South Australia Limiting the Profitable Production of Rangeland Goat Meat* has now concluded and provides a detailed summary of the relevant South Australian regulations and legislation and the challenges they present, this report will endeavour to provide key insights into the development of a supply chain program to assist the Australian goat industry. At the time of the development data within this report and subsequent to this meeting, B.GOA.0101 was implemented and the undertakings of both reports were not able to be aligned. This report recommends this alignment further as part of the overall recommendations.

3.5 Strengths and weaknesses

In review of the research that has been undertaken, it is clear that there are definite strengths and weaknesses within the current goat industry supply chains:

	Strengths	Weaknesses
Rangeland Chains	• Strong demand • Good relationships within supply chains • Drafting saleable lots for processing (depot) • Provision of feedback from processors, especially for repeat suppliers (weight mostly) • Product quality	• Supply hampered by weather making it difficult to freight harvested goats • Regulation impact in SA ensuring market there cannot expand • Lack of market understanding by producers • Specification discrepancy • Lack of opportunity on domestic market for certain goats • Limited information within industry on starting and maintaining supply chains • Limited systems to access value markets (skin on market)
Farmed Chains	• Boer product considered premium • Product conformation ideal for market • Weed control on farm • Increasing saleyard opportunities	• Unreliable supply numbers all year round • Lack of data on market usage of product • Specification discrepancy • Limited information within industry on starting and maintaining supply chains • Lack of depot style management for famed goats • Limited differentiated marketing

4 Determination – Many supply chains or one value chain

4.1 Goat supply chains – An understanding

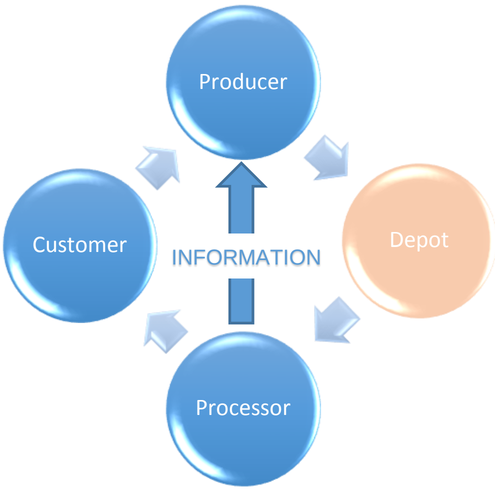

Figure 18: Standard Australian Goatmeat Supply Chains for both Rangeland and Farmer goats

It is clear from the research undertaken that the supply chains that manage goats are simple in nature. This is due mainly to the large amount of rangeland product supplied. Depots can aggregate and draft animals and in some instances hold animals back till they reach saleable weight. Domestic production is slightly more complex, with a much smaller market and more specification (such as carcase conformation, fat cover, livestock age i.e. Cappreto, Chevon). Processors are well linked into a supply chain through either an agent or depot to purchase export product, leaving them once removed from production.

4.1.1 Supply chain characteristics

Understanding the characteristics, strengths and weaknesses within supply chains, via the research findings in section 2, provided solid information for the determination of the project recommendations. As has been articulated, the process of mapping goat supply chains is relatively simple, both at a rangeland and farmed goat situation. However there are weaknesses within the simple "supply chain" process, most notably the area of goat supply. Supply is impacted at a physical level from weather (rangeland) and consistency (farmed) as well as lack of information regarding what to supply, when to supply it and how to manage performance feedback.

Below is the definitive list of characteristics of the current supply chains taken from the research:

- Simple supply chains
    - Producer – Depot (Occasional) – Processor
    - Export – Direct from harvest to processor
    - Depot – Must be of top quality systems in order to be trusted by processors
    - Domestic – Direct from farm to processor
- Two distinct production groups

- Rangeland
  - Large quantity harvested because they are there!
  - Opportunistic harvesting (weather permitting) providing a good secondary/tertiary income
  - Processor provides strong messages on what they want
  - Addition of proper Total Grazing Pressure (TGP) fencing allows management of those not sold from harvest, as well as breeding programs
- Farmed
  - Introduced to farming enterprises to undertake other roles (weed control) then culls and other product sold for slaughter
  - Cast for age product from fibre and dairy businesses
  - Dedicated producers for specific markets (branded product, butcher, restaurant)
  - Opportunistic producers breeding and selling based on research, word of mouth, differentiation with mixed success.
  - Differing levels of expectations on market returns forcing enterprise change (i.e. move to Dorpers)

- Processors
  - Export
    - Most using agents to manage supply, leaving them once removed from the production process. Agents or commission buyers find goats for processors and purchase on their behalf.
    - Sending strong messages on product through use of market grids
    - Provision of feedback vital in education of supplier on market requirements and therefore encouraging better management of goats overall
    - Agents are mostly supplied direct from farm/harvest. Only using quality depot arrangements to ensure quality of product, correct specification and no situations of waiting to consolidate loads
    - Often transportation issues with location of goats when climatic conditions are unfavourable (i.e. rain affected dirt roads).
    - Always looking at other markets and other products to market (skin on/off). This is to ensure minimal goat wastage with other goats of other specifications being able to be used rather than kept on farm or drafted out
    - No branded product, only based on market entry specification (Rangeland = Natural and/or Free Range in US regulations)
    - Supply always an issue
    - SA has potential but cannot manage supply in current regulatory climate
  - Domestic
    - Mixture of proactive (making calls) and reactive (receiving calls) regarding supply systems. Some are almost opportunistic (will kill if they arrive)
    - No market/slaughter size mobs for processing, ensuring difficulty in managing kill space
    - Some just supply a service kill for producer based branded product
    - Specific markets for branded and bulk product. These are mainly butcher and wholesaler with a small amount of direct to restaurant.
    - Supply situation critical both in numbers and consistency
    - Addition of rangeland product as opposed to farmed product for bulk meat purchases also angering farmed goat suppliers

- Little communication with supplier

4.1.2 Supply Chain Issues

In reviewing the issues articulated within Section 2, it is clear that there needs to be an introduction of new thinking in underpinning supply chains to assist with increased supply of desired product and information. The supply of goats within Australia comes with a number of concerns. These have been articulated within the research however can be simply summarised as:

- Supply
- Consistency
- Information (Communication)

What is also clear is that there has been a number of attempts to manage these issues by businesses themselves with limited success (goat supply groups, depot management, branded product, supermarket lines). Further, the concern raised throughout the research has been that state departments and RDCs (i.e. MLA) have provided little or no assistance in the further development of the industry as a whole as it relates to supply of product, just specific issues such as market access. This may be a real or misinterpreted situation. Also, little has been done in the area of freeing up regulations that impact on the industry, most notably the issue of management of rangeland goats within South Australia.

It must be remembered, however, that in the midst of these issues, the industry continues to grow as a steady rate. Australian goat slaughter in 2013 reaching 2.07 million head the highest on record and production reaching 31,500 tonnes cwt, the highest on record (McRae T and Thomas B, 2014). Therefore, in this climate of growing demand and increasing industry capacity, why does the research point to issues in key areas that underpin supply chains?

The situation seems to be that, whilst product may be there to put through a supply chain, participants, especially in the areas of domestic supply and farmed goats, don’t see value in being part of a supply chain.

As has been discussed there were a number of comments within the research pointing to “if it isn’t broke, don’t fix it” mentality. As per section 3.5 of this report (page 26), there is still a number of weaknesses within the supply chains, including in rangeland goat supply chains, where participants see issues in the areas of information flow, market information and feedback as well as specific areas regarding supply and current data on numbers. The research and work undertaken within the “Value Chain Toolkit”, delivered by Primary Industries and Regions SA (Government of South Australia) (PIRSA), looks at making improvements within these areas by developing systems that manage “value chains”, as opposed to supply chains. Supply systems and processes are set and are a strength according to research, therefore these need not be altered. Rather, improvements remain in the areas of weaknesses as outlines, which can be strengthened by working developing of value chains.

4.2 Supply chain vs value chain – the need to change

According to the “Value Chain Toolkit”, delivered by Primary Industries and Regions SA (Government of South Australia) (PIRSA), “*The primary difference between a supply chain and a value chain is a fundamental shift in focus from the supply base and producers to the customer base and consumers*” (Primary Industries and Regions South Australia, 2014). The research clearly shows that the industry, by its sheer nature, is opportunistic, whether it is harvesting goats from the rangelands, using goats for weed control or slaughtering of goats when kill space is available. Some of the large processors have developed systems to purchase goats all year round and send price signals through grids. They further strengthen this relationship with information on weight and grade. However the research is also clear in showing that suppliers crave more information on a range of areas (Appendix 4 and Appendix 5), processors want security in supply which can be achieved through some "feed forward" information from suppliers, and industry itself is looking for more information on how product is moving through the supply chains (Section 2.1.2.7) (Day, 2012).

Therefore, the industry needs to move from a "supply chain" approach to a "value based" approach. As part of the research, the consultants reviewed the program that has been undertaken by PIRSA in value chains within the agricultural industry (Primary Industries and Regions South Australia, 2014) against the outcomes that supply chain participants desired, articulated in Section 2. This work has focussed on the wine industry as the example, and has looked at a variety of issues outside just supply and demand, being:

- Value Chains
- Customers and consumers
- Supermarkets
- Sustainability
- Value Chain Analysis
- Business Benefits
- Success factors

The consultants agreed that, as the bulk of the industry is a commodity product, there are some areas that are not applicable within goat industry supply chains. However, the key areas of value within this approach are in the areas of understanding value chains outcomes as opposed to management of supply chains, how value chains meet customer's requirements and how to undertake a value chain analysis on the goat supply industry. This type of analysis will assist in providing information on ideas and options on how to add value to the goat supply chains, where value can be added, what form this value will be and then how to maintain the value chain. The analysis would then work to answer the major queries that have resulted from the research outlined in section two in the areas of

4.2.1 Using value chain analysis to meet information supply aspirations of the goat industry

According to Andrew Ferme (Professor Of Food Marketing And Value Chain Management, Director Of The Centre For Value Chain Research At Kent Business School, University Of Kent, United Kingdom), "*In Supply Chains, relationships are weak because businesses are pushing product with all of their might, irrespective of what the next link wants. Because there's very little trust, information doesn't flow very freely from one organisation to another"* (Ferme, 2009). We can see that this is typical of the goat supply chains that we have reviewed. Producers don't know where product ends up (Appendix 8) and processors have issues with supply, as they don't know what may be coming next. There is a greater need to understand from the processor end what the customer wants, even if this is just a commodity product.

This can be achieved by better information coming back from the processor. Again this is where the development of the “value chain process” arises, linking outcomes such as MLA R&D and MLA Services to real data from areas such as processor feedback and production data, rather than the current situation of feedback provision without any idea of how to manage the information, nor how to work with the processor to meet their requirements. In Section 2, Figure 11 provides a great example of how this is working on a small level. The research shows that when producers stayed “loyal” to a processor, and the processor felt secure in supply, more data was collected at slaughter floor to assist in product improvement. The survey outcomes in Appendices 4 and 5 point to producer’s requirement for more information. By looking at the supply of goats through a “value chain” approach, increased provision of data, underpinned by R&D, can provide product improvements that meet the needs of the whole supply chain. Using the current supply chain approach, being “please provide goats” as the only message going back down the chain, provides no way to benchmark performance and then assist in product improvement.

4.2.2 The Example – PIRSA case study – Lamb value chain

In order to review how such a process would work to assist goatmeat supply chains within Australia, the consultants reviewed the National Lamb Value Chain Project. The National Lamb Value Chain Project, which commenced in 2008, involved six state primary industries departments, the Department of Agriculture, Food and Fisheries, CSIRO and Meat and Livestock Australia (Primary Industries and Regions SA, 2008). This project utilised a methodology including consumer research, a life cycle analysis of carbon emissions and the amount of water consumed in the supply of fresh lamb to a large retailer in Australia and California. The value chain analysis investigated the physical flow of lamb along the chain to the consumer, the nature of relationships between chain participants and the flow, or lack of flow, of information along the chain (Primary Industries and Regions SA, 2008). The program looked at an export and domestic supply chain for lamb. The main improvement findings from the analysis revolved around the variable quality of lamb supplied to retail and the lack of information flow along the chain. Inconsistencies also showed in variability of supply to farm and saleyards and the need for risk mitigation for productivity improvements. The SA Lamb Value Chain Case Study combined extensive consumer research with sustainable value chain analysis to make a number of recommendations to the industry. The analysis provided new possibilities for supply and production chain efficiencies and delivery of innovative ideas and sustainable solutions by looking at the information required to meet consumer expectations through an increased understanding of the eating quality attributes valued by lamb consumers. The research concluded that “A value chain is when all parts of a supply chain work collaboratively to create competitive advantage and increased consumer value through product and process innovation”. The research within Section 2 suggests this is what industry desires to achieve through use of information to meet their own customer requirements.

The consultants agree that there is already an opportunity to sue the findings from this research and new tools to assist the goat industry into moving to a value chain outcome. This could commence with the use of the Livestock Data Link (LDL) program. LDL is designed to take feedback on carcase performance, provide this in a form for producers to easily access and understand and then link this performance with current MLA R&D to then assist in improving carcase quality and other attributes. The consultants believe that there are a number of attributes that can be added to this program for goats. An example of this is linking the conformation of goat carcases to the nutritional management of goats and how better nutrition, perhaps managed through industry guidelines, leads to better product quality outcomes (Jolley, 2013). This example could be captured as data through this program. In former employ the consultant group oversaw the first iteration of this program for MLA, providing a solid understanding of how the system of information feedback works. As it is currently being used within the lamb industry, testing within the goat industry would not be difficult.

Recommendation – That Meat and Livestock Australia investigate the key quality attributes (in addition to weight) that both producers and processors want and need to develop a specific goat industry "Feedback/Feed Forward Program". This may include linkages to other systems within the MLA such as the "Livestock Data Link" program

4.2.3 Customers

Industry often confuses customers with consumers. Ferme agrees, stating "*Value Chains, customers are businesses that we sell products to. Consumers are the final consumers of the finished product*". In the rangeland industry, for the most part, it is clear that producers supply the customer, the processor. They have a grid and if possible draft and supply. The Farmed Goat industry has taken steps to understand the consumer through programs such as producer groups, research and aligning themselves to butchers however this has been successful in very few cases. Whilst this can be attributed to physical supply issues, lack of market reporting, quality feedback and industry data plays a large part in managing supply. As can be seen within the lamb industry (Primary Industries and Regions SA, 2008), what needs to occur within the industry, in order to encourage and increase this communication, is more linkages between producer and processor. This does not mean just opening up the processor door for a tour, rather a systematic approach to providing an understanding of product development, marketing and market access of goatmeat. Processors require help within this area, as currently there is no assistance and little direction on how to manage and structure such a program, other than presently what is undertaken, such as have a lead supplier speak to staff at an abattoir. This provides little value.

Recommendation – That Meat and Livestock Australia develop a series of workshops, in collaboration with processors, on product development, marketing and market access. The workshops will be designed for processors to invite key suppliers to provide an understanding of what happens with their product and stimulate stability or change within their supplier's production businesses, to suit the desired outcomes of processors. This may be undertaken as a Processor Initiated Project (PIP) or developed through the MLA Donor Company.

4.2.4 Value Chain Analysis

PIRSA have provided to industry resources that can be used to further review the value chain properties of current goat industry supply chains, being the diagnostic tool *Sustainable Value Chain Analysis*. This has been used as shown in the lamb industry as well as being funded by MLA (Primary Industries and Regions SA, 2008). This program has been designed from a number of collaborative projects between University of Tasmania, University of Queensland and University of Kent and was utilised in the lamb project. This value chain analysis (Primary Industries and Regions South Australia, 2014):

- Defines value creation in terms of the product attributes which affect consumer behaviour (willingness to pay and frequency of purchase);

- Identifies which activities add this value, from inputs for agricultural production to consumption/disposal of the final product;
- Evaluates the preparedness of chain to create, realise and distribute value effectively;
- Compares the environmental impact of different activities along the chain, and
- Assesses the scope for the chain to act collaboratively to create competitive advantage through both product and process innovation and improved environmental management.

Whilst the Australian goat industry has two distinct supply chains (export and domestic) and the products within these are different, the implementation of a value chain analysis is the next step in defining how the chain can act collaboratively to create that competitive advantage and "meet customer requirements", whatever they may be. This report has highlighted how the current supply chains operate, what the basic outcomes are and what the industry view is on supply chain improvement. Taking this report's outcomes to the next level would be the undertaking of a value chain analysis in the same vein as the lamb industry (Primary Industries and Regions SA, 2008). It would be designed to achieve the outcomes as above, which the data from this report suggests the industry requires. This would also link in some of the industry strategies designed to improve the industry, such as the Goatmeat Industry RD&E plan (Day, 2012). This type of analysis will be ideal to understand how the industry can meet the objectives of such plans as well as plans designed for the future of the industry, such as the new Meat Industry Strategic Plan (MISP), being developed by the Red Meat Advisory Council (of which GICA is a member). A process like this will also tease out some of the information in order to understand the priorities of the industry and how best MLA or other groups can meet these. Examples of these include processors desire to supply the "skin on" market in China, however the right processing equipment is needed. This equipment, if installed, will allow processors to also take smaller goats from a rangeland harvest. Much has been done in the area of branded goat and more is being done on a business by business basis by MLA. Provision of information on products back down a supply chain assists in adding value to the supply chain rather than the products within it, such as improving management of drafting of goats or meeting specifications.

Recommendation – That Meat and Livestock Australia undertake a value chain analysis within the goat industry, one for rangeland production and one for farmed meat goat production. This program should look to what do each individual business do in affecting the product at each stage in the chain, identify how well information flows from the consumer all the way back to the primary producer (linked to Recommendation 1) and investigate relationships businesses have with their customers, and their suppliers.

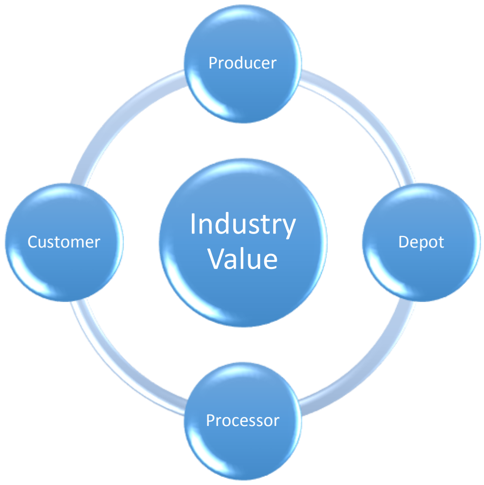

Figure 19: New Version of Goat Industry Supply Chain (proposed). This diagram explains pictorially the new way of working within current goat supply chains. Each sector is connected to the other in supply (product, information, values etc). This adding value to the outcomes of the supply chain

4.3 South Australia

Through MLA project B.GOA.0101 a Hypothetical Application to SA Pastoral Board for the Holding/Farming of Goats has been developed and could be used as a template by producers.
In the opinion of the researchers, the outcomes of a value chain analysis will have a beneficial effect on the work that has been done and is being done regarding issues pertaining to regulatory barriers within the South Australian Rangeland Goat industry. Such work will show the value that can be achieved at each part of the supply chain, along with the implementation of sustainability measures designed to achieve what the pastoral board needs (i.e. removal of feral goats) whilst having a positive outcome for producers and processors.

The project contract methodology indicated a series of 'model' supply chains would be developed including specific SA supply chains. This was not able to be achieved in full due to the recently commenced and currently ongoing project undertaken by Rural Solutions SA. This has been an extremely difficult part of this project as it this project, commencing after the start of this project, rendered this project's objectives within this area obsolete. However it is the opinion of the consultants that, at the conclusion of the work of Rural Solutions SA, that a merging of outcomes from both projects be undertaken to enhance the recommendations of both projects and provide a single process of assistance to industry to upgrade goat supply chains to value chains.

Recommendation – Rural Solutions project outcomes be added to the Value Chain Analysis with a specific outcome designed to present the value proposition to the SA Pastoral Board

5 Conclusion

The aim of this project was to provide a comprehensive review of the current and former goatmeat supply chains within Australia, identify the key roles played by some types of organisations in consolidating supply and collating and disseminating information through goatmeat chains, categorise supply chain features and measurement of success and identify and analyse successful supply chain attributes. It is quite clear that the current supply chains, as far as systems for supplying product, are simple and effective in nature. They have been able to evolve and adapt, especially in the supply of rangeland goats, to the increasing needs of the processors in regards to weight and grade. The introduction of feedback has provided producers with some insight as to how product has performed and where product needs improvement. This has been done through the introduction of systems such as drafting and weighing. There are some good supply chains for the domestic trade, however these are limited to farms suppling their own product to be slaughtered and then marketing at farmers markets or selling to wholesalers or restaurants. Data is limited here.

With all supply chains, there are challenges. As with other remote industries such as Northern cattle production, climatic factors can greatly affect the supply of goats at any time. Processors too have challenges in the management of product on arrival as well as marketing and market access for product. Domestic suppliers cannot supply with the consistency and amounts required to sustain a product line for 12 months a year, therefore remain a niche product and are treated as such. Regulation burden in South Australia against Rangeland goat management severely hampers the opportunities of that industry flourishing. Presently processors are having to go interstate to obtain drafted and weighed goats from Western NSW to slaughter in SA. It should be noted that the project contract methodology indicated that "*a supply chain directory would be create, an industry approved and trusted supply chain reference program and a road map linked to R&D strategy and investment (phase 4) would be developed*". A supply chain directory was not able to be achieved due to the nature of the information provided i.e. processors not allowing information on suppliers therefore articulation of basic supply chains was all that was achievable, which has been discussed with MLA. It was noted within the research that information linked to physical locations of processors is available on the Goat Industry Council of Australia website (www.gica.com.au). As yet there is no actual legal definition of a depot other that in the current Sheep and Goats NLIS Guidelines (www.nlis.com.au). Locations of depots are being developed under rule changes within the NLIS program to denote "depots" however as yet this has not been finalised, again hampering development of a supply chain directory. However the road map linked to the MLA R&D strategy has been provided through the use of the value chain analysis approach.

The outcomes from this research point to the development of a value chain analysis of the industry as a second part to the overall understanding of the supply chains within Australia, and how value can be added to these through research and development, extension, data, information flows and transparency. It is clear from the research that all of industry "hungers" for more information to improve product, whether that information be as simple as more information on feedback sheets to as complex as the impact of market access outcomes on goat supply into the future. A similar approach to that of the SA Lamb value chain analysis (Primary Industries and Regions SA, 2008) can meet this goal.

The recommendations provided, if undertaken, taken together with this research, and the outcomes from SA Pastoral management work *(MLA Project B.GOA.0101 - Rural Solutions SA*), will link into industry based plans such as the Goatmeat RD&E strategy of MLA to deliver real benefits to the Australian goatmeat industry. This type of research should be rerun within a 3-5 year period to ascertain the improvements within the industry and therefore success of the recommendations and research. The consultant's role was to develop and provide a roadmap with ideas and recommendations based on the research undertaken. The consultants believe this has been achieved and if recommendations are undertaken the best outcome will be the development of the link to any R&D program, allowing dissemination through the supply chain by the virtue of how a value chain operates.

6 Recommendations

The following are provided as recommendations to be considered by MLA and are aimed at increasing the feedback and feed forward information within the Australian goat supply chains, provide opportunities to develop and strengthen relationships, understand what the value proposition is within the Australian Goat supply chains, as opposed to just supply, and also provide a value proposition to the discussions regarding the barrier to trade within the SA Rangeland goat industry through regulation

1. **Recommendation – That Meat and Livestock Australia investigates the impact on supply chains on the issue of weather and the seasonal management of harvested as catalyst to improve or balancing supply**

2. **Recommendation – That Meat and Livestock Australia investigate the key quality attributes (in addition to weight) that both producers and processors want and need. MLA would develop a specific goat industry "Feedback/Forward Program" of this data. This may include another system within the MLA "Livestock Data Link" program**

3. **Recommendation – That Meat and Livestock Australia develop a series of workshops, in collaboration with processors, on product development, marketing and market access. The workshops will be designed for processors to invite key suppliers to provide an understanding of what happens with their product and stimulate stability or change within their supplier's production businesses, to suit the desired outcomes of processors. (This may be undertaken as a Processor Initiated Project (PIP) or developed through the MLA Donor Company)**

4. **Recommendation – That Meat and Livestock Australia undertake a value chain analysis within the goat industry, one for rangeland production and one for farmed meat goat production. This program should look to what do each individual business do in affecting the product at each stage in the chain, identify how well information flows from the consumer all the way back to the primary producer (linked to Recommendation 1) and investigate relationships businesses have with their customers, and their suppliers.**

5. **Recommendation – That the Rural Solutions work be added to the Value Chain Analysis with a specific outcome designed to present the value proposition to the SA Pastoral Board**

7 Bibliography

NOTE: Most citations link to outcomes of desktop research located in Appendix 1

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8 Appendices

Appendix 1: Desktop review outcomes

Rangeland harvest

- Income from feral goats has helped sustain many pastoral enterprises, especially through lean years, and has kept many pastoralists on the land (McBride, 2012)
- Essentially, the term refers to a change in attitude whereby goats are no longer considered a pest or sideline operation, but a resource that can be incorporated into mainstream farm business operations. Implementation of the concept could include establishing criteria for the most appropriate time of harvesting, outlaying capital for the erection of goat fencing to facilitate harvesting and rangeland management, and supplementary feeding in the period prior to slaughter. At least some of these options are already being implemented by some traditional woolgrowers in the Mulga region of Queensland and New South Wales (Elliott, 1998)
- Mr Leigo estimates there is now about 400,000 ha of properties adjoining his which are fenced for goats. “My neighbour started the ball rolling - he was the first to fence goats out in this country here and then myself and another neighbour to that property tacked onto it, and then another tacked onto that,” he said (Luke, 2013)
- Recommendation - Investigate the positive and negative influences of harvesting on the rate of increase of unmanaged goat populations across wet, moderate and dry seasons in the eastern and western parts of the region (Kimball, 2011)
- Broadly speaking there are two drivers underlying goat management – conservation and commercial objectives. Both use numerous control techniques and result in varying management goals (Kimball, 2011)
- In essence feral goats are not legally owned by anyone but if declared a pest their control becomes the responsibility of the landowner where they occur (Kerle, 2011)
- An evaluation of commercial harvesting as a pest management strategy is currently being undertaken by Dr Steve McLeod through the Invasive Animal Cooperative Research Centre (CRC). In this project the question of whether commercial harvesting will reduce pest numbers to a level at which their environmental impact is minimised is being assessed. When does commercial harvesting contribute to pest management, how much does it contribute to both production and conservation goals and what influence do markets have on the profitability and sustainability of commercial feral goat harvesting (Kerle, 2011)
- Opportunistic harvesting of feral goats is profitable for landholders in all districts and its profitability could be improved by additional capital investment aimed at maximising feral goat turnoff (Khairo, 2011)

Regulation impact

- The South Australian Pastoral Board has always adhered to a strict policy of not allowing goats to be run as part of a pastoral enterprise, and enforces legislation which places responsibility of removing feral goats on the landholder (McBride, 2012)
- A trial on Lilydale Station, Burra, has shown that goats can be run as a managed enterprise in the rangelands. As part of the trial the board issued a temporary permit to one pastoralist to stock domesticated goats in a controlled manner, in accordance with the board's Domestic Goats Policy under conditions including the provision of a management plan, risk assessment, a prescribed fencing standard, and stock identification in accordance with the National Livestock Identification System (McBride, 2012)

- Most of the processor/exporters believed that unrealistic attitudes' of government agencies advocating eradication of feral goats are a major impediment to industry development. Another problem is the attitude of industry stakeholders who fail to invest resources into the marketing or quality control of feral goat products (typically fly-by-nighters' who consider the feral goat industry to be an opportunistic industry (Elliott, 1998)

Domestic market

- If we can use more Boer genetics we may look at domestic markets in the future (McBride, 2012)
- There is some speculation that the lack of a solid domestic goat meat market inhibits growth in the export sector (Ferguson, 2012)
- Recommendation - Investigation into the potential domestic market for small rangeland goats should be a primary focus for industry bodies. A limited market for these animals reduces producer confidence in the industry, and thus volume of supply (Ferguson, 2010)
- Developing local supply chains – there is a small number of existing and developing supply chains throughout Australia. From a buyer's point of view, the value of a well-developed supply chain is consistent supply. There may be opportunities for producers to develop their production system to channel product in to a supply chain. As with any production venture, the costs associated with value-adding need to be weighed against the potential financial gains (Meat and Livestock Australia)
- John and Christine are planning to develop a meat enterprise as a sideline to their mohair enterprise. The plan would be to sell the product direct to the customer, using outlets such as farmers' markets, and catering for people with special dietary needs and those who appreciate the unique qualities of goatmeat. The opportunity exists within their current enterprise to market goats that are surplus to the fibre herd, increasing the profits generated by the business. This would require some changes to the way the herd currently operates: culling at heavier weights and breeding for increased size and robust constitution (Meat and Livestock Australia)
- The Booths believe that a healthy domestic market, supplied with a quality product will, in the future, lead to a premium export market. Marketing to secure a premium price requires a lot of research and hard work, such as product must be Halal killed and supplied direct to Sydney (Meat and Livestock Australia)
- Farmed goat meat holds considerable potential for Victorian producers but the industry is currently restricted by lack of supply and little differentiation from feral goats (B. Kearns, 2002)
- Definition of market specifications outside the Cappreto market has also been a challenge as this has predominantly been an export market reliant on meat from feral goats (B. Kearns, 2002)
- The domestic market is currently supplied by individual producers or marketers who accumulate goats from other producers to increase volume. All of these producers reported that the domestic demand for goatmeat, particularly at the high end food service industry, well exceeded supply and that if they had access to a more consistent supply of quality goats they could supply multiple times their current volume into the domestic market (Swain, 2011)
- The domestic market is looking for a carcase which is not as lean as the export market and therefore more than likely from a Boer or Boer X animal (Swain, 2011)

Supply issues

- "If we have a marketable-size mob of goats, we would send them to market but we struggle to even fill a trailer load" (McBride, 2012)
- The inability to source sufficient goats was a serious problem for some operators. A component of this problem was the disruption to harvesting and transport associated with wet weather, particularly during the winter months in western New South Wales (Elliott, 1998)
- To give goat production in western Queensland a critical mass requires others breeding rangelands goat herds as well, and so Ian is hosting an MLA-supported forum on-property on Wednesday, June 19 (Cripps, 2013)
- Goat industry leaders believe a consistent supply of product to the expanding world market can only be achieved if more beef and sheep producers consider goats as a secondary revenue source (Pedler, 2012)
- Mr Telford, who operates a mixed cattle and goat property north of Roma, said wild dogs and a lack of APVMA-approved chemicals for use on goats presented serious further challenges to expansion (Global demand is driving goat industry growth - North Queensland Register)
- He said growing the farmed goat industry was the only reliable way to establish a continual, consistent supply of goat meat into the future. "We would like to increase the number of goat producers," he said. "We believe that by growing the farmed goat industry, we can even out some of the peaks and troughs in supply (Pedler, 2012)
- Decreasing the market channel steps or distribution costs and marketing animals in uniform or consistent groups will generally increase live animal value (McMillin K. W. and Brock, 2005)
- Recommendation - Undertake scenario modelling (e.g. more individuals harvested but less frequently, versus less individuals harvested but more frequently) using theoretical harvest rates and rates of population increase to compare the differences in adopting varying harvest target numbers (Ferguson, 2012)
- The commercial use of unmanaged goats is a highly volatile industry subject to price fluctuations, climatic influences on population size, costs of harvesting and the perceived need by the landholder to control goats (Kerle, 2011)
- It is widely accepted that profitability and seasonal conditions are the major factors affecting the number of feral goats harvested (Ferguson, 2012)
- Goat processing plants still cite consistency of supply as being the major factor affecting profitability. They noted an increase in 'farmed' rangeland goats improving supply and generally providing a better quality line of goats with less size variation. All plants indicated that supply was heavily affected by road closures during rain periods (Ferguson, 2012)
- The market for goatmeat within Australia is limited by inconsistent and irregular supply of product to fit market specifications (Ferguson, 2012)
- David and Mary believe that the goat industry and the organics industry face similar challenges: both need to find ways to supply large volumes of high quality product, consistently over twelve months of the year (Meat and Livestock Australia)
- The development of a supply chain approach with an underdeveloped industry is a difficult task, especially given that the immediate focus of many producers has been to improve their management skills and increase production (B. Kearns, 2002)

Industry aspiration

- Managing supply chains for increased reliability so markets may be developed with confidence (Day, 2012)
- Advance a sustainable Australian goat industry that rewards producers and all sectors of the supply chain, meets the needs of Australian and international goat consumers, and maintains the environment and the welfare of goats (Day, 2012)
- Supply chain management and marketing – consolidating profitable supply chains through market development for goats, goatmeat and co-products (Day, 2012)

Current supply chains

- Some markets will take both rangeland and Boer-cross goats, depending on availability, price and condition. Producers may sell farmed goats direct to consumers (either live or following slaughter or butchering), to a processor or to a middle-man such as another producer with larger markets. Direct sales may be via farmers' markets and festivals or private sales to a network of food service outlets or butchers. Some producers and supply chains have conducted promotions and market development campaigns (e.g. 'gate to plate' events, tastings, recipe giveaways and cooking demonstrations) to generate demand by educating consumers (Day, 2012)
- The supply chains for goatmeat are not simple, but depots and increased processor capacity have significantly improved their operation and the consequent demand for goatmeat (Day, 2012)
- The diversity can mean that market segments receive meat of inconsistent quality or that does not align with their needs (Day, 2012)
- There are two main supply chains, emanating from the rangeland and farmed goat systems. However, there is movement of goats between the systems (especially from the rangelands) and some markets will accept goats from either source, depending on quality and price. The supply chains are interconnected and dynamic. The main supply chains for goatmeat and goats are (Day, 2012):
    - Rangeland goats are harvested and sold either directly to processors or to intermediary depot managers. Rangeland goats and goatmeat are sold to export markets (as whole or 6-way cut carcases – or live to South-East Asia for slaughter) and to domestic markets (mainly to culture based consumers, butchers and restaurants but some to premium outlets as well).
    - Farmed (Boer-cross) goats may be sold to larger producers but are often direct marketed by producers, with the aid of contract butchers, to domestic markets (both culture based and premium outlets, including farmers markets and festivals) and as live exports for stud purposes
- The location of goat processing plants does not correspond with goat populations apart from the Western Exporters plant at Charleville (Ferguson, 2012)
- Marketing Australian goat meat has always been restricted by limited and seasonal supply; and while supply is still affected by seasonality, slaughter numbers have doubled in the past ten years and industry infrastructure and organisation has seen marked improvements (Ferguson, 2010)
- The Australian goatmeat industry is largely based upon a commodity sourced from low input production systems in Australia's rangeland environments (Swain, 2011)
- The recent large increases in sheep and lamb prices has had a detrimental effect on domestic farmed goats numbers as many producers have opted to focus more on sheep production (Swain, 2011)

- Depots have made it more feasible to sell small numbers of goats that individual producers / harvesters may have available, by amalgamating with other small numbers in order to achieve economies of scale, particularly in relation to freight costs (Swain, 2011)
- Depots have generated more confidence amongst processors that supply will be available. As a number of depots are located 'on the bitumen', weather interruptions to transport are also reduced, resulting in a more consistent supply (Swain, 2011)
- Depots draft goats according to live weight in an attempt to reduce the number of undersized (no commercial value) goats being supplied to processors. These animals can be kept on farm to grow out prior to being sold. This has the potential to reduce wastage in the supply chain which ultimately takes pressure off supply (Swain, 2011)

Data

- There is data available on goat exports, but not a lot on domestic consumption and less on goat production (Day, 2012)
- The lack of data on goat populations, producers, processing and sales means that people need to be closely involved in the industry before having an informed view on supply and demand issues (Day, 2012)
- There is little benchmark data available for comparisons or for ready reckoning. Low-cost processing technologies for goat would add to profit margins in the industry and help secure long-term commitment from processors. Cost-savings could result in an increase in the effective processing capacity and available product, and also expand the range of markets available (e.g. making supermarkets more feasible) (Day, 2012)
- A clear representation of the supply chains available in the goat industry would assist all players, and prospective entrants, to better understand and evaluate their options, contributing to a better industry. This may be in terms of simple representations of the markets, their specifications, costs of production, typical price ranges and the alternative channels available, and/or case studies involving all segments of the supply chain (Day, 2012)
- MLA goat industry development manager Blair Brice says more data across the goat industry, from the nutritional value of goat meat to cost production exercises, is needed in order for the industry to better communicate its benefits (Pedler, 2012)
- However, there are inconsistencies in the reported distribution and abundance of feral goats, and information is very limited at the regional scale. Much of the research has been undertaken by state agricultural departments, and as such has undoubtedly been influenced by state based policy developments (Kimball, 2011)
- Recommendation - Develop an easy-to-use method, possibly using dung counts, for landholders (or groupings of landholders) to be able to accurately estimate goat numbers (Kimball, 2011)
- There is a paucity of data on the goat meat industry in Western NSW. The recommendations made in this report involve extending our knowledge in order to better manage the grazing pressure exerted by the goat industry. Areas needing further research include determining the number of feral goats being harvested in Western NSW, the number of rangeland goats being managed within TGP fenced areas, determining the area of Western NSW fenced for total grazing pressure control, determining the actual numbers of managed rangeland and feral goats slaughtered each year, the viability of establishing a lot feeding system for underweight goats in Western NSW (Ferguson, 2012)

- Variability exists in feral goat population density, goat reproduction rates, the portion of the entire feral herd that are actually harvested and disposal of underweight animals among other factors (Ferguson, 2012)
- It is unknown what portion of the slaughter numbers have been sourced from ‘farmed’ rangeland animals and whether the increase in animals slaughtered can be accounted for with a corresponding increase in TGP fenced country (Ferguson, 2012)

Economics

- Although the industry is small, entrepreneurs have developed a diverse range of sale and processing options to optimise the overall value of each goat and provide opportunities at all stages of the supply chain. There are no economic models of the supply chains and no information is available on the profitability of the links (Day, 2012)
- However, a number of processors have invested in goat supply chains (domestically and overseas) and are unlikely to quickly withdraw their services to local producers (Day, 2012)
- The greatest advantage for Ian in running goats is that it can offer an income for most months of the year (Cripps, 2013)
- Issues associated with this market centre on pricing. It is difficult to source the animals in good seasons when it is more financially rewarding for producers to hold the goats to a higher weight. It is also less cost-efficient to process a small animal, which increases the costs/kg and subsequent price (Ferguson, 2012)

Welfare

- Many goat processing facilities are remote from areas of high goat numbers so transport and goat welfare are important issues for goat supply chains. The impacts of stress on goats may be seen in reduced meat quality and in the health of the animals; even though it may take some days to be evident. (Day, 2012)
- "Running them up a race gives them too much stress - they turn round or they jump on each other - so I invented my own," he said. It's similar to a pound yard in concept and means Ian is able to draft a mob of 2000 head by himself with the aid of dogs in quick time. (Cripps, 2013)
- Recommendation - Ensure that animal welfare considerations are a prominent feature of any goat management control and harvest effort, and that they are funded accordingly (Kimball, 2011)
- Animal welfare must be an integral component of any strategy as required by the NSW Prevention of Cruelty to Animals Act 1979. The Western CMA would also have a role in ensuring that landholders are fully informed of the Standard Operating Procedures and Codes of Practice for harvesting and culling programs, as well as the standards required through our obligations to the World Health Organisation and the National Livestock Identification System (Kerle, 2011)

Product quality

- Although very efficient at weed control, Ian believes you can't really fatten goats for sale and use them for weed management at the same time (Cripps, 2013)
- Processing of meat into more palatable and usable forms or providing meat at times of higher purchaser demand will usually increase the price of the meat. Age, breed, and diet influence tenderness, juiciness, and flavour, with higher fat in carcasses and cuts from goats fed concentrate diets. The meat from kid and

yearling goats of low conformation could be distinguished by goat meat consumers from the meat of goats with medium and high conformation (McMillin K. W. and Brock, 2005)

- Value can be added at many points in the meat system of production, distribution, processing, and sale of goat meat products. Younger, leaner, and more heavily muscled goats are more valuable regardless of breed and diet, whereas increased goat age generally decreases meat tenderness and sensory properties. Most meat processing and preservation technologies can be used to produce goat meat products, with improved product consistency through uniform cutting and fabrication practices and sorting of raw materials (McMillin K. W. and Brock, 2005)
- Areas of Tindarey are cropped when season conditions are suitable. In 2011, 40 ha of oats and 100 ha of silk sorghum were sown. Crops such as silk sorghum and oats have been grown successfully and utilised as a grazing crop and supplement for weaners and finishing goats. Good growth rates have been achieved by grazing goats on the silk sorghum crop, for example, 18–20 kg bucks averaged a weight gain in 2011 of between 2 and 2.5 kg per week (Jones, 2012)

Product specifications

- “They’re now taking the time to draft and they’re drafting off the animals which the market wants.” Mr Schuster said the depot system – where a particular landholder will collate goats from the surrounding region, draft them into marketable lots and transport them to abattoirs – had guaranteed supply and allowed much of the growth in the industry (Luke, 2013)
- Specifications for the domestic market vary according to cultural preferences. Marketing has focused on the food service trade using Boer and Boer cross animals that are similar to lamb in appearance, however, supply shortfalls have restricted market development in this sector (Ferguson, 2012)
- Recommendation - The creation of a premium, branded Australian product, selling the health benefits of goat meat as well as the positive environmental message of controlling a potentially environmentally damaging animal, in essence, it is the story of the Australian feral goat that could be sold (Ferguson, 2010)

Appendix 2: Producer responses to question 4

Question 4 - Can you please tell us why you originally become involved in a goatmeat supply chain? (producers, n=78)

Note - responses are verbatim and have not been edited.

we wanted to sell goat meat at our local farmers market
Using goats to clean up our woody weeds and hoped to gain a small financial reward as well
Purchased goats to help clean up paddocks, loved them, found that the little does brought quite good money for Malaysian market which helped with the poor price being paid for wethers at times.
great MEAT GOOD PRODUCT THAT CAN BE SOLD AS A PREMIUM MEAT AFTER ALL THE RUBBISH GOAT MEAT LEAVES AUSTRALIA
Sale of surplus fibre producing goats and sale of prime boer cross kids bred for the trade.
I run Boer and Boer cross goats and believe there should be a profitable market for the meat. It is tasty and nutritious and should be an important part of our red meat diet.
Due to the plentiful supply of rangeland goats on our property and the increase in goat value to a commercial and viable figure.
Farming angora wethers - shear their mohair for the first few years then send them for meat when 3-4 years old.
to make an extra income
We had a very high supply of feral goats
We purchased our property in 2007 with the intention of breeding meat goats and drought master cattle. We felt that goat meat was an up and coming industry to be entering into .we did our research and workshops with MLA and decided to split our interest between cattle and goats although we now have Dorper sheep as well.
feral goats
We have feral goats on our property, and have been active in mustering and selling the goats to control numbers on the property.
To sell goats excess to requirements and to make some money out of keeping meat goats.
Harvesting feral goats.
Opportunity.
Bought property, researched and believed there was a potential market in my local area
To clear secondary scrub vegetation and receive an income from meat goat sales
During the drought we had to give up dairy farming and work away from our farm to bring in an income. When we came back 3 yrs. later our farm was over grown with weeds and after some investigation into the Boer Goat breeding industry we began breeding Boer goats with a view to get our farm back under control and we wanted to still be able to make an income from our farm.

We now have a marketable meat product.
It was (and still is) our belief that goats were particularly well suited to our hilly and rocky terrain. At the time, about 7 or 8 years ago, there appeared to be a reasonable, even good return for the extra work involved in raising goats. This was especially so in the case of export breeding stock before the GFC.
Abundance of Rangeland Goats in the area
Began producing Cappreto in 1995 there was no supply chain into the local market.
I originally started breeding goats 20 years ago to control timber regrowth and woody weeds on light country.
Tried to supply goat meat to the AUS domestic market and invested a lot of money to attempt this.
I bought a grazing property (Western Lands Lease) near Cobar. It had been my intention to run Dorper sheep on the property. I have owned the property for just 8 months and my plans have changed. I will be harvesting feral goats for the next two years and progressively moving into managing goats after that once my property's infrastructure is up to scratch. I then hope to be turning off goats of a uniform size/weight in an attempt to maximise returns.
Minimal husbandry in Rangeland goat husbandry We can see the potential of the goat industry
to raise income from farming meat goats
Ferrel goats were left on the farm I purchased two years ago.
Breed Full blood boer goats
We believed it was important to spread risk thru diversification. We also understood that goat meat is a healthy choice & the most eaten meat in the world. Also believe western NSW is very suitable for goat enterprise.
Because I had goats to sell
Boer goats are ideally suited to our country and hence becoming a supplier of high quality goats was an attractive option.
Brought rangeland goats down from the station country and developed a cashmere goat herd in the agricultural area. Sold feral goats from the station. Sold Cappreto from the domesticated goats.
originally to harvest small numbers of range land goats to keep numbers under control and also an extra income
As a goat producer for 40+ years I have always been involved in selling cull stock and more recently, Boer goats.
Believe Goat meat is the red meat of the future unless People become more active (unlikely)
Goats were the a new prospective growth industry which we were sure would grow and be profitable for us
started out as hobby farmers, loved the goats and started breeding them and so started our business
catching wild goats

We have Rangeland goats on our property for many years
Selling surplus goats from stud. Later selling Premium Boer Goat Meat at Farmers Markets and restaurants.
selling feral goats
We liked goats and goat meat, live close to Canberra good demand for good quality goat meat
We joined South table Cooperative (Marulan/Goulburn) to supply high quality farmed boer goat meat to the Sydney restaurants. Specifications 24 kgs live weight 50% or greater boer deciduous teeth and condition score 3. Fixed price $37.50 1998 We built up to 350 breeders and had up to 500 kids to sell pa (keeping replacement females as necessary) This meant we could concentrate on growing the animals. The cooperative didn't last very long, poor quality control lost their contracts and we were forced to market them ourselves.
We have supplied goats to the export and domestic markets since 1980, and up until 2010, now only domestic supply with very small numbers of export.
I was given a handful of goats and they took over.
My father and I started mustering feral goats off our property but we could only sell the heavy bucks n dry nannies. To quiet down the smaller goats mum invested in some bore goats. Now we are turning over 500-800 goats a year.
We breed and run goats. We went into Angora goats approx. 20 years ago but found they weren't suitable to our country type so we gradually switched to meat goats. We believed that there was a future in the meat goat industry as ours are totally free-range and pasture fed, and the meat is very tasty and healthy.
In the 1970's the goats were competing with the family's Merino enterprise, we were among the first to start sending goats away to an abattoir, we were paid very little for them. Soon goats were paying boarding school fees, despite the ag Dept policy of shooting them and not allowing any non-commercial ones back out in the paddock. It was total madness and we used to open the gates at night in the dark or cart them out in secret. Once goats became re-classified from "vermin" to be part of the stocking rate, their status improved, though goats still suffer from the "vermin' tag to this day (mainly by city people) and were subject to much mistreatment and cruelty. Eleven years ago we sold all our Merinos to concentrate on goats - they did not need shearing, dipping, worming, tailing, they bred prolifically and our country actually improved! They were also chemical free, do not stand in a corner and die for a drink like Merinos. They did not contaminate neighbours' sheep like damaras, in fact they were very territorial. We introduced some Boer bloodlines, culled billies heavily and nannies with long hair, bottle udders were also culled. Goats are the perfect product for us in the rangeland - that's why we became involved in the goat industry!
I have a passion for goats, and have done both dairy and meat goats, it’s something I have been involved with since a child on a farm, so many reasons why
Increase numbers of migrants who eat goat meat so wanted to be the primary producer of goat meat. Now have farmed boar meat goats
We thought the goat meat industry had a lot of potential. Low fat meat, easy care animals, high birth rates, low inputs.
Because it is a viable business in our area as we have quite a large amount of goats move through the property. Low maintenance and good return are key factors in this decision.

I switched from Angoras to Boers as they were less work. I wanted goats because I liked them and for weed control.
We are trying to find outlets for our goat meat which was not too far away and where we could sell smaller lots at a time as exporters want 100 head at a time delivered. We are also trying to sell privately so we can value add
decided to breed goats as a combined income\weed control asset
Land management and cash flow with feral goats
Love goats there easy to look after and the lack of goats in my area
We are a grower and supply local abattoir.
We sell feral goats to remove them from our pastoral property. We have been doing this for 40 years.
Bank manager for goat producers and goat buyers + small herd of 20 does
Lean Meat Good animal to work with. Knowledge of where this meat comes from and we pride ourselves of the quality. No excess chemicals are used if at all apart of the odd drench.
Running Boer goats seemed like a good idea
WE ARE REARING GOATS AS A PRODUCTION CELL ON OUR PROPERTY.
To reduce total grazing pressure from our property and also to take advantage of the good prices on offer. Goat income make a significant contribution to our infrastructure program. All profits are put back into infrastructure.
To build a commercially viable prime goat meat enterprise
Weed Control of property
There is an increasing demand for the meat, therefore seeing an opportunity
like farming boer Goats - see them as best livestock for my land and time and lifestyle
When we first had goats marketing was rather opportunistic which was time consuming as far as finding markets was concerned. I became involved in a supply chain because I know the requirement for the goats I supply and I know there is always demand for my animals. A phone call to establish a delivery date is all that's required and they accept the smaller lines which I can deliver myself.
Weed control/ Gap in the industry
Supplying ferals to give better NRM out comes through incentives , such as traps around watering points
Due to shortage of quality meats available I believed an opportunity existed
Money
Grazing pressure; available source of income.
We are rangeland goat producers. Love the goat industry. Our country is suited to goats. Minimum husbandry.
We started selling Cappreto to Sydney 4 years ago.
As I could not afford Dorpers in 2006 I purchased pregnant Boer does for weed control - and I have supplied up to 40 weaned kids (av Lightweight 25-30kg) to the local abattoir annually and more recently an abattoir further away as the local abattoir is filling their orders with rangeland (which now due to increased transport costs is making selling them to an abattoir uneconomic but I can't fit all my kids in the freezer)

Appendix 3: Producer responses to question 9

Question 9 - Are there other factors not listed above that have contributed to the continuation of your supply chain? (producers, n=39)

Note - responses are verbatim and have not been edited.

Reasonable payment for good quality goats and continuous reasonable payment, too many up and downs in the returns
I breed all the goats I sell myself
PREMIUM GOAT MEAT IS A SEASONAL PRODUCT
National market reports
Yes, as we harvest feral goats it is very much an opportunity. IE Goats have to move in to our property so we can harvest
For me, 'reliable supplier' means having an abattoir close enough for me to send stock to
Lack of supply because of wild dogs
We are a small grower with 150 goats so we cannot continually supply markets making our marketing difficult.
Legislation in South Australia prohibits the farming of goats on pastoral leases, therefore we have no control of what numbers we can supply or when. We are limited to a control situation, and cannot plan for a continuation of a supply.
Best price. Proximity
Local goat buyer
Sourcing Knowledge, Good Vet, Support
The most obvious factor without a doubt is for a producer to receive a price that reflects the cost of production for their commodity, and that is clearly not the case in regard to farmed goat meat. I could argue my case for hours, with numerous examples to support my contention, but I fear space will not allow it. Please feel free to contact me if you really do want to hear.
producing top quality product supplying exactly what we agree to supply
I usually build up goat numbers until the price rises to a reasonable level then sell direct to works via an agent.
Export jobs, supply of seedstock
Proximity
Demand for quality product
Always best price factor
Trust
more available markets in the Wimmera at present have to deliver 5 hours away for processing to buyer
price stability
Quality of supply. Do not understand how this is not included as without it forget the supply chain.
We sell the goats at the farm gate

The disruption of the supply chain by government intervention and the ban of live exports.
The price being paid for goat meat is of utmost importance, probably 80%!
WILD DOGS!!!!
Overall forward prospects for industry
No defined markets difficult to sell for domestic consumption
Payment that reflects the cost of producing the product. Farmed animals are more expensive to produce, but provide a superior product to the feral product.
no
payment guarantee
Word of mouth
Cooperative between producers
price
fgfdff
weather
it's simple for me and suits my enterprise
MLA support, rasv support, farmers markets and field days

Appendix 4: Producer responses to question 49

Question 49 - What feedback would help you to better work within supply chains? (producers, n=56)

Note - responses are verbatim and have not been edited.

List of kill weights with fat scores
NONE
Live weight before slaughter
carcass quality, perhaps a carcass score
Quotas to fill, different markets and weight ranges.
Regular Pricing Update
Better communication about transport availability
Why carcass are condemned
Exactly what they want?
Knowing that the goats were killed on the day that they are booked in.
get good feedback.
Knowledge of gaps in supply.
What the carcasses dressed down to, was there any feedback from the butchers that they on sold the carcasses to
I believe that you have got this completely wrong! If you want to talk about high end farmed goat meat then the price link to feral stock has to be blown asunder!
to know as soon as possible if we are not hitting the quality standards agreed upon
I would like to see a price per kg differential between a young wether and a cull for age doe
Publicised price
Feedback is great
Don't know
Advanced notice produce demand to allow for breeding adjustments
Higher price
Happy with what is happening
Earlier warning of numbers required for a given period
What kind of goat are our buyers (usa, asia) specifically looking for. e.g. carcase weight between 12-14 kg
Better forward marketing information
Yield compared to average yield.
None
If they are not happy with the condition or how the goat is transported
carcass net weight
We have decided the marketing of goat is just too time consuming and we are in the process of changing over to white Dorper sheep.
better yield slats differing price between Harvested and managed Goat

Payment basis clarifications, i.e. skin on, skin off, yield between male and female??
Feedback has been sufficient
Because we are interested, we ALWAYS chase up the abattoir / purchaser. A phone call or email at the start of the season from the purchaser would greatly assist. We are proud of our product, want to know they were killed asap and not waiting around over the Xmas break etc. The whole chain MUST become aware of welfare issues.
Carcass specification and analysis (copy the sheep and cattle models) so as to help improvement
Market specifications - cuts of meat
Better prices
Nil, we have very good communication with all people within our supply chain.
Current state of broader market
More services to process meat and advertising of goat meat
annual times of peak demand
No other feedback
Quality. Fat levels.
Weight after kill who buys more knowledge of the end buyer
Needs
Information about yield and quality of the meat post slaughter, e.g. Any dark cutters or stress related. Issues.
Quality review
MARKET REQUIREMENTS
real state of animals once they arrive
:)
the feedback I receive is all that I need for my operation
Working more closely with MLA and trying to bridge the gap between farmed and rangeland goats
None
None
Excellent feedback already received
None

Appendix 5: Producer responses to question 50

Question 50 - Are you able to list any particular skills that would help you to better work within your supply chain? (producers, n=56)

Note - responses are verbatim and have not been edited.

NO
NONE
estimating live weight and yield without the use of scales
Patience
Nil
Cannot think of any
No
Better at knowing weight from sight
No
Change of Legislation.
no.
Aviation
Skills - not sure but it would be good to own a set of scales so we can track our target weights
If I received a higher value for my stock then I would be able to invest in better genetics and better infrastructure.
No
No
No
Better understanding of entire goat supply chain
Producing more consistent carcases over the dry period
N/a
Being able to control the weather
No
None
No
No
No
No
Better yards
No
The marketing of goats is so mickey mouse throughout e.g. every time we take culls to the processors they always try and say there are 1-2 animals less than delivered, you have to make the empty the truck into an empty pen so you can demand they recount. There is no organised market for good quality farmed goat meat.
No

Ensure value for money, production will shut down at current values do to negative gross margin.
Communication has been a vital skill
I would like to visit the abattoir i.e. follow one of our consignments then observe the kill and processing, then find out where the product will be sent.
None identifiable
goat farming, labour, marketing and selling agents
No
If we implemented weigh scales in our goat yards.
No
More information
No
We are going to weigh goats to make sure they are correct and none underweight.
Scoring training
No
No
A goat meat is so popular around the world, I think a very broad education program regarding market specifications, and breeding, managing etc would be well worth while. We know we can improve land management and have better ecological outcomes through TGP management. I would like to learn more about the business of goat harvesting and production in a controlled environment and compare that to what we achieve with our sheep and cattle.
No
NO
Nope
:)
none that I can think of
Better packing or subsidised packing machines
No
None
Forward estimates of pricing
advertising, sales

Appendix 6: Producer responses to question 52

Question 50 - Are you able to elaborate on how you have connected others to supply chains, what you did, how you helped, the process etc? (producers, n=48)

Note - responses are verbatim and have not been edited.

Gave out phone numbers and lists of required weights ,ages
I sell my genetics to other people in my area to increase supply but maintain carcass quality. We then sell our product ourselves at a premium price. Farm to plate
referring producers to buyers and agents
Passed on names of reliable breeders. Shared names of honest processors.
Gave them contact details of others further down the supply chain
Informed another supplier about where I send my goats for slaughter and how to make the transport arrangements
We have worked with other breeders to create a continuation of supply to a restaurant in Brisbane. We have sold animals to other new breeders to start up herds.
Verbal contact giving the name and phone number of a processor.
Word of mouth.
Mustering
A lot of new breeders are not sure where they can sell their wethers, so I will pass on to them who we have dealt with in the past and our experiences.
Put them in contact with goat buyers
Put producers in touch with butchers and wholesalers, included other producers in my supply chain. assisted producers to find suitable abb's to get their animals killed
Introduced breeders to export opportunities. Sourced stock from unconnected breeders.
Forward contact details for breeders and buyers
Introduced other producers & supported new enterprises into goat industry
No
gave phone numbers, addresses, specs etc and let others decide for themselves
passed on buyer information
We have them help us muster etc
We formed Brindabella Goat Meat Producers with other local goat farmers to try and help with the marketing of goat meat, it has died also after quite a few years.
word of mouth
referred to buying groups and individuals Different markets for different types of Goats
Names and contacts

No
Through word of mouth letting people know how I market goats
We have recommended they try the same Depot that we have been using.
information on goat farming, information on how to cook goat meat
We tell our neighbours what the suppliers are paying for the varying weights of goats, etc.
I buy and sell goats from other producers as well as raise goats
giving contact details of buyers
Sold breeders on
referred them to good buyer - i.e. good price, quick payment
Past on information of prices. Made up loads with neighbours.
Speaking to other small producer lining up a market Helping to speak to breeders of improving buck selection
buyers and sellers introduced to each other, butchers for other farmers
Supply of breeding animals
TOLD THEM OUR MARKET.
No
linked other farmers to our butcher
Passed on the contact details of the person organising the supply chain
We help set up new to industry farms, consult, supply breeding stock and bring together other farmers in the area, training and a very informed web site
making other producers aware of market opportunities
No
Put others in contact reliable buyers.
No
supplying product
Gave them phone numbers to call or told them which abattoirs process goats

Appendix 7: Legislation in Australia regarding the status of unmanaged goats

The legal status of the feral goat varies across jurisdictions in Australia. With the exception of NSW all other states have declared feral goats as a pest

SOUTH AUSTRALIA	Prescribed measures for the control of goats are regulated under the *Natural Resources Management Regulations 2005.* These measures require:
	
	• Goats on land without the consent of the owner (feral goats) must be controlled (to a satisfactory level determined by a regional Natural Resources Management Board). Captured goats can be held on the property on which they were mustered for no more than 6 weeks after which they must be destroyed.
	• Goats on land with the consent of the owner (farmed goats) must be kept in captivity with secure fencing.
	
	Under the *Natural Resources Management Act 2004*
	
	• Goats on land without the consent of the owner (feral goats) that are captured;
	  ○ cannot be wilfully be released from captivity and;
	  ○ cannot be moved (if they have been in captivity less than 3 months) without a permit unless the movement is directly to slaughter.
	• Goat must not move to or kept on offshore islands (except Kangaroo Island)
	• Goats cannot be kept in the Flinders Ranges Development Plan Prescribed Area without a permit.
	
	Pastoral Land Management and Conservation Act 1989:
	One of the conditions of a lease is that the lessee cannot pasture (as part of the commercial enterprise under the lease) any species of animal on the land other than the species specified in the lease, except with the prior approval of the Pastoral Board. (refer to Section 22 (1)(b)(i),)
	
	The only species of animal specified in leases are sheep and cattle, There is no plan to vary from that to include goats at this time. Therefore, it is not possible to run goats on a Crown land held under a pastoral lease in South Australia.
		Mark Williams
		Senior Biosecurity Advisor, Pest Animals
		Biosecurity SA
		08-83039520
		mark.williams9@sa.gov.au
		
		Glenn Gale, Manager, Landscape Conservation Branch, Policy Directorate, Dept Environment, Water and Natural Resources.
		ph (08) 8303 9345
		glenn.gale@sa.gov.au
		
		David Hanna, Pastoral Board Exec Officer, Boards and Committees Branch, Policy Directorate, Department of Environment, Water and Natural Resources
		ph (08) 8226 2127
		david.hanna@sa.gov.au
		
		John Fennell
		Principal Industry Officer
		PIRSA Agribusiness & Regions
		08-82263854
		0401 121 891
		john.fennell@sa.gov.au

State	Status	Contacts
NEW SOUTH WALES	Under NSW legislation unmanaged goats are unprotected fauna and are not the property of the crown or of the landowner and are subject to common law. However under Commonwealth Environment Protection and Biodiversity Conservation Act 1999, the landowner is deemed to be the owner for harvesting or control purposes. Feral goat issues in the rangelands (Western Districts) are covered by the *Western Lands Act 1901 - Section 18D* which controls the entry and removal of material by authorised persons (occupiers) on leased land. The Commissioner can direct occupiers to control vermin on leased lands, however feral goats are not currently subject to control orders. The Commissioner can also make direction regarding stocking levels. Legislation in NSW seemingly has no negative impact on the harvesting and farming of goats in the NSW rangelands.	Russell Grant Operations Manager Western Catchment Management Authority 02 68 361 575 0419 970 213 russell.grant@cma.nsw.gov.au

QUEENSLAND	Feral goats are a declared Class 2 animal under the *Land Protection (Pest and Stock Route Management) Act 2002* and landholders are required to control numbers on their land. Managed goats are classified as livestock under the *Stock Act 1915* and therefore are subject to same requirements as all other livestock. Rural leasehold land is land leased for agricultural, grazing or pastoral uses and is administered under the *Land Act 1994.* Under the Act landowners must take are reasonable steps to manage declared pests. The duty of care for the land provisions of the Act, where they were previously not defined, are clarified by the Delbessie Agreement. Producers can enter into a land management agreement with the Queensland government and minimisation of the impact of declared pests would be one issue that would be addressed. For example where feral goats are identified as an issue the Plan may provide for targeted mustering and sale to an abattoir or for domestication. In the case of National Parks or other state government lands administered by the Queensland Parks and Wildlife Service (QPWS) tenders are offered to harvesters to remove feral goats from government lands. In general the regulations and the way they are applied has allowed the development of the Queensland goat industry, with investments in depots and abattoirs a result of this pragmatic approach.	Frank Keenan (Invasive pest issues) Manager Policy and Strategy Invasive Animals and Plants Biosecurity Queensland 07 3405 5540 0434 987 264 frank.keenan@daff.qld.gov.au Morgan Gronold (Trade and supply chains) Principal Trade and Investment Officer Food & Agribusiness Unit Trade & Investment Queensland 07 4651 2997 0407 125 765 morgan.gronold@deedi.qld.gov.au Warwick Lee (Policy) Principal Policy Officer Animal Industries Agricultural Industries and Forestry Department of Agriculture, Fisheries and Forestry 07 3405 6788 warwick.lee@daff.qld.gov.au

VICTORIA	Under the *Catchment and Land Protection Act 1994* only feral or wild populations of goats are declared as established pest animals for the whole of the State (domestic goats are not regulated). Both public and private land owners must take all reasonable steps to prevent the spread of, and as far as possible eradicate, established pest animals. It is also an offence to import, keep, sell or release an established pest animal without a permit.	Andrew Woolnough Principal Policy Officer Invasive Animals Invasive Plants and Animals Branch Biosecurity Victoria, DPI 03 9658 4718 Andrew.Woolnough@dpi.vic.gov.au Will de Milliano Manager Legislation and Strategy Invasive Plants and Animals Branch Biosecurity Victoria, DPI 03 9658 4008

WESTERN AUSTRALIA	Under the *Agriculture and Related Resources Protection Act 1976* (ARRPA) feral goats are a declared pest throughout Western Australia. The entry of feral goats into Western Australia is subject to a permit and/or conditions (A4), feral goats numbers are reduced/controlled (A5), and their keeping is subject to permits and/or conditions (A6). Requirements under ARRPA are currently being transitioned to the *Biosecurity and Agricultural Management Act 2007* (BAM Act). Under the BAM Act feral goats are a declared pest. Feral goats will be declared as pests, assigned to a C3 or management control category throughout the whole of the State and the keeping of them will be restricted. Goats (feral goats) in pastoral areas of the State are declared as authorised stock if kept under a management plan under the Land Administration Act 1997 (LAA). Keeping of feral goats is regulated in the agricultural areas of the State. Policy is being considered to harmonise requirements under the BAM Act and the keeping of goats in the pastoral and agricultural areas of the State	Megan Hevron Senior Policy Officer – Invasive Species Dept of Agriculture and Food, WA O8-93683321 0409 901 817 megan.hevron@agric.wa.gov.au Tim Johnson Trade Development Manager – Livestock Industries Dept of Agriculture and Food, WA O8-93683585 0467 772 367 tim.johnson@agric.wa.gov.au

Appendix 8: Producer phone survey

Primary producer responses (16 interviewees)

1. Please tell me about the goatmeat supply chain(s) you have been involved in.
    a. What was/is the final product(s)
        i. Domestic wholesaler – 2
        ii. Farmers Markets/direct – 4
        iii. Restaurants – 2
        iv. Export – 3
        v. Breeding animals – 2
        vi. Start-up – 1
        vii. Don’t know/unsure – 5

2. Did you get support from others in the supply chain and/or from others not in the supply chain in order to participate in the supply chain? (I.e. govt, NGO’s)?
    a. Majority worked it out themselves or through word of mouth
    b. Very little information available about marketing and selling animals/product – 2
    c. A lot of information available about production and herd management – 1
    d. Breed association (for animal husbandry) – 1
    e. Breed association (for selling) – 1
    f. State govt (marketing plan) – 1

3. Thinking about the goatmeat supply chains you have been involved in, what attributes were/are important to their success?
    a. Strong demand – 6
    b. Good relationship with processor/customer – 6
    c. Good product – 4
    d. Have different marketing/selling options – 4
    e. Consistent supply – 2
    f. Prompt payment – 2
    g. Feedback from processor – 1
    h. Processor takes all types of animals – 1
    i. Good animal welfare standards at slaughter – 1

4. What do you think are important attributes of successful supply chains?
    a. Consistent supply – 4
    b. Good communication/relationships – 4
    c. Market/price differentiation (saleyards vs over the hooks, farmed vs harvested) – 3
    d. Payment guarantee/prompt payment – 2
    e. Consistent pricing – 2
    f. Information about available markets/selling options – 2
    g. Range of marketing/selling options – 1
    h. Clear quality specifications – 1
    i. Consistent demand – 1
    j. Marketing – 1
    k. Low cost of production – 1

5. Thinking about the goatmeat supply chains you have been involved in, what attributes limited/limits their success?
    a. On farm
        i. Freight (and associated costs) – 5
        ii. Inconsistent quality – 3
        iii. Marginalised because of size (kill numbers) – 2
        iv. Seasonality – 2
        v. Poor animal identification (results in thefts) – 1
        vi. High set up costs – 1
        vii. Lack of knowledge about animal management (by other producers) – 1
        viii. Personal commitment to animal welfare – 1
    b. In supply chain
        i. Inconsistent supply – 6
        ii. Lack of knowledge/information about marketing/selling options - 3
        iii. Lack of knowledge between supply chain participants – 3
        iv. Lack of scale (to meet demand) – 2
        v. Lack of marketing – 2
        vi. Limited marketing/selling options – 2
        vii. Lack of transparency in pricing – 2
        viii. Lack of market/price differentiation – 2
        ix. Inconsistent pricing – 2
        x. Inconsistent demand – 1
        xi. Inconsistent payment – 1
        xii. Poor animal welfare standards (at slaughter) – 1

6. What do you think are the main impediments to establishing supply chains?
    a. Did not ask this question

7. What do you think are the main impediments to maintaining supply chains once they are established?
    a. Potential abattoir closure – 1
    b. Potential disease/pest outbreak – 1

8. Is there anything (information, skills, infrastructure – on & off property etc) that would help you to work with the supply chains you are currently involved with?
    a. On farm
        i. Improved drenches – 3
        ii. More information about on-farm management – 2
        iii. Information about genetic improvement – 2
        iv. Improved on-farm infrastructure/facilities – 2
    b. In supply chain
        i. More information (real time) about marketing/selling options – 7
        ii. Improved marketing (domestically) – 4
        iii. Depots/collective marketing for farmed animals – 3
        iv. More feedback – 2
        v. Improved/consistent grading system – 1
        vi. More processing facilities – 1
        vii. More information about market specifications – 1
        viii. Clarity about price differentiation – 1
        ix. Improved knowledge about how to process goat carcases – 1

Appendix 9: Processor phone survey

	Export VIC 1	Export SA	Export Vic 2
1. Please tell me about your goatmeat business			
a. How long have you been involved in goat meat industry? (years)	3	5	30
b. What state are you based in and what states do you source product from?	Based in Vic. Source in NSW	SA. Source in NSW and SA	Vic, majority NSW with a little bit from SE QLD and SA
c. What was your estimated production in 2012-13? (Head per week slaughtered)	3000	7000	8500
2. Please tell me about the goatmeat supply chain(s) you have been involved in, or currently involved in			
a. How many people/stages were/are involved?	60% direct from farm, 40% via depot	Initial harvest, then through a depot/buyer and then through to us, our supply chain is over the hooks traded	Have improved this greatly to 100% hook traded. Rather than depots waiting to create loads larger consolidators now operate hook trade only meaning weights pay. This is an improvement for animal welfare
b. How large is your role within in the supply chain?	Goats go direct through buyers. Basically phone call to get goats here. Maybe visit once twice a year and most go through agents and depots	Due to over the hooks we provide feedback AUSMEAT based. All information goes through our main buyer	Traders buy and manage the livestock. I ensure that good communication is undertaken, market access, managing brand names. We are making the large investment. China coming on board but not impressed with FTA. 5 grids of weight ranges
c. What was/is the final product(s)?	6 way mostly with little carcase	6 way mostly with little carcase	6 way cut, 8 way, 10 way and portion product (breast and flap) both skin on and skin off. The supply chain consistency has ensured that confidence in investment in plant improvement. All natural fall, no boning.
d. Where and/or to whom did/does the product go?	USA	USA	Skin on has increased from 5% to 45% in 2.5 years due to China and lesser extent US. All the rest US
e. Does your business manage this under a brand?	All carcase no label	All goes to our subsidiary in the United States. Little into China. All sold as one commodity	Everything goes Free Range (other than farmed goats).
f. What were/are the logistics of getting goats to your business? (i.e. What transport was/is involved)	OTH delivered price. Issues when it rains	This is an issue with no B double access to Lobethal. We split at Murray Bridge and Dublin but we are working towards this. This is a disadvantage	We invested in transport ourselves to manage this with some contractors.
g. Did you get support from others not in the supply chain to participate in the supply chain? (i.e. govt, NGO's, MLA)?	No	No	For plant improvement were MLA has co funded, that was it. Had key relationships with key people
h. If yes, what sort of support/help did they provide?			
3. Thinking about the goatmeat supply chains you have been involved in, what attributes were/are important to their success?	No real relationship with suppliers too much. As stated just a phone call and get the supply. There is an agent between this	Modern day OTH trading leading to management of product including drafting and treating them like a proper livestock transaction. No longer bonus beer money. Allowed growers to have more input than just harvesters telling them the price. Now a transparent system	Key relationships with key people, Got serious on marketing goat and needed to underpin this, Understanding rejections and developing systems to manage this, Providing outlets for producers when abattoirs closed, Developing marketing signals to producers to manage supply
4. What do you think are important attributes of successful supply chains?	Continuity of price to us, Continuity of supply to us		As Above
5. Thinking about the goatmeat supply chains you have been involved in, what attributes limited/limits their success?	Providing processing space for goats.	We don't have a skin-on program at our facilities, At times missed smaller operators due to changing of our systems. We miss these goats	Managing overflow of goats when grids and price signals cut them out, Understanding processing operations by producers including major welfare issues including kidding goats, sick goats as well as managing supply against processing
6. What do you think are the main impediments to establish supply chains?	Continuity of supply, here one week and none the next	As above	Having an appreciation of how the market actually works as per margins and therefore impact on cost of production
7. What do you think are the main impediments to maintaining supply chains once they are established?		As above	
8. Is there anything (information, skills, infrastructure – on & off property, co-investment, new markets etc) that would help the supply chains you are currently involved with improve?	Dedicated kill space to goats which made it easier for us to manage, dedicated industry specifications	As above	Industry needs to understand drafting goats on weight and health manage
9. If applicable, why did you leave the supply chain?			

	Export QLD 1	Export VIC 3	Domestic SA 1	Domestic SA 2
1. Please tell me about your goatmeat business				
a. *How long have you been involved in goat meat industry? (years)*	5	12	12	15
b. *What state are you based in and what states do you source product from?*	QLD. Source in QLD and NSW	SA. Source goats in NSW, SA, VIC and QLD	SA. Source goats in NSW, SA, VIC and QLD	Based in SA. Source goats for domestic trade 70% from SA and 30% from NSW
c. *What was your estimated production in 2012-13? (Head per week slaughtered)*	3000	4500	1,000	40
2. Please tell me about the goatmeat supply chain(s) you have been involved in, or currently involved in				
a. *How many people/stages were/are involved?*	Direct from farm or depot, mostly farm	60% of product is direct from farm to processor, with 40% through depots.	100% goes to depot owned by processor who then processes these weekly	People know us in Adelaide Hills know us and contact us and we buy on the spot
b. *How large is your role within in the supply chain?*	Due to over the hooks we provide feedback AUSMEAT based.	I have a massive role for these plants from stock buyer to stock agent to processor, looking after all within the supply chain and also includes managing transport. This includes, where possible, education and updating on industry issues, markets and marketing	I have a massive role for these plants from stock buyer to stock agent to processor, looking after all within the supply chain and also includes managing transport. This includes, where possible, education and updating on industry issues, markets and marketing	People are changing from farmed goats to Dorper, which is making it hard. Now having to rely on ferals. So we are now working with them on taking parts of larger mobs going to export works. We are taking more of a sales call program
c. *What was/is the final product(s)?*	6 way mostly with little carcase	97% goes to 6 way market, 3% chilled carcases	This is both skin on and skin off product, with 30% going to Adelaide and 70% going to Melbourne	40% carcase and 60% processed products such as diced and sausages
d. *Where and/or to whom did/does the product go?*	USA	90% USA, 10% SE Asia	Domestic 100%	Domestic in SA
e. *Does your business manage this under a brand?*	All goes to Foodcom our subsidiary in the United States. Little into China. All sold as one commodity	All carcase no label	All carcase no label	All carcase no label
f. *What were/are the logistics of getting goats to your business? (i.e. What transport was/is involved)*	Issues when it rains and not getting access	For VIC export sometimes this is hard to find transporters	No issues for SA domestic as all goes to processor's depot and then transported from there to slaughter	Major issues getting goats to processor who slaughters. Need to manage our supply based on customers requesting Boers one week and then diced product the next week
g. *Did you get support from others not in the supply chain to participate in the supply chain? (i.e. govt, NGO's, MLA)?*	Not to my knowledge. MLA was going to do a field day, no forums for industry	No	No	No. The only assistance was a state based committee looking at the industry. This included a SA strategic plan for the industry
h. *If yes, what sort of support/help did they provide?*	MLA needs to work harder	MLA needs to help more in these areas, especially in education	MLA needs to help more in these areas, especially in education	
3. Thinking about the goatmeat supply chains you have been involved in, what attributes were/are important to their success?	Modern day OTH trading leading to management of product including drafting and treating them like a proper livestock transaction. No longer bonus beer money. Allowed growers to have more input than just harvesters telling them the price. Now a transparent system	• Honesty and integrity of people working within supply chain • Ability to fix problems for suppliers • Provide feedback on problems at plant • Be the glue in the middle	• Honesty and integrity of people working within supply chain • Ability to fix problems for suppliers • Provide feedback on problems at plant • Be the glue in the middle	• Linkages to Indian restaurants has helped in providing supply messages back our suppliers. This has then led to wholesalers buying direct from us in massive quantities as opposed to chasing restaurants • Sausages which our own recipe are now being utilised by supermarkets. Due to the fact they are never all Boers we cannot supply cuts based program. We have tried this with Bi-Lo and this never worked. People did not know how to cook it and supply of Boers was never there
4. What do you think are important attributes of successful supply chains?	As above	• Readily available kill sheets • All the work that has been done has seen processors lift their game	• Readily available kill sheets • All the work that has been done has seen processors lift their game	
5. Thinking about the goatmeat supply chains you have been involved in, what attributes limited/limits their success?	We don't have a skin-on program at our facilities, At times missed smaller operators due to changing of our systems. We miss these goats	The fact that the issue remains in SA that we cannot manage slaughter goats in a commercial way including the ability to store goats so that we can take them when they are at prime slaughter weight as well as keeping nannies etc for breeding and further management	The fact that the issue remains in SA that we cannot manage slaughter goats in a commercial way including the ability to store goats so that we can take them when they are at prime slaughter weight as well as keeping nannies etc for breeding and further management	Supply of Boer goats within the major areas such as Capretto or cuts based programs
6. What do you think are the main impediments to establish supply chains?	As above			As above
7. What do you think are the main impediments to maintaining supply chains once they are established?	As above			As above
8. Is there anything (information, skills, infrastructure – on & off property, co-investment, new markets etc) that would help the supply chains you are currently involved with improve?	As above	No real need to change what we are doing, it is just muster them, transport them, and slaughter them. However there are a few areas that would be good to see improved: • More skin on product processed • Education on managing goats, especially when we have wet season in the North and we cannot transport them	No real need to change what we are doing, it is just muster them, transport them, and slaughter them. However there are a few areas that would be good to see improved: • More skin on product processed • Education on managing goats, especially when we have wet season in the North and we cannot transport them	Our plant was the group that did the Capretto book. When we had a Chefs Table program, our suppliers who promised goats then never delivered. This needs to change.
9. If applicable, why did you leave the supply chain?				

Appendix 10: SA Goat industry meeting report (3 October 2013)

Goat Industry Meeting

3 October 2013

A cross section of the goat industry was invited to discuss the development of a sustainable commercial goat industry in South Australia. (Attachment 1).

The objective of the meeting was to provide an overview of the current industry, discuss issues affecting the productivity and sustainability of the industry and the implications of South Australian Legislation on keeping and harvesting of goats in rangeland areas.

It was anticipated all participants agree to progress the development of a sustainable commercial goat industry by further better utilising rangeland goats in South Australia.

1. Industry overview

South Australia's goat industry consists of managed goats and goats harvested from the pastoral region. Estimates suggest that there are around 33,066 managed breeding does and up to 320,000 rangeland does. Combined, these two sectors currently could sustainably provide up to 245,500 goats per annum for processing for human consumption. In 2012-13, 223,200 goats were processed for domestic and export markets.

2. Overview of MLA's Supply Chain Project (Peter Schuster, MLA)

The Australian goatmeat industry has experienced strong growth over the past 20 years, largely supported by the sale of goats derived from rangeland or extensive production systems. Australia is the world's largest goatmeat exporter, with around 95% of Australian goatmeat exported, accounting for around 50% of the global trade.

Around 90% of Australia's goatmeat production is derived from rangeland goats, the majority of which are mustered from semi-arid western regions of the eastern states. The rangeland goat population was estimated to be in excess of 2.6 million head in 2011, but an accurate measure of the population is unlikely, due to the vast spread of the population and ability to reproduce rapidly under favourable climatic conditions.

Most Australian goatmeat is exported and most export meat comes from rangeland goats for use in wet cooked dishes (e.g. stews, casseroles or curries).

Most of the meat sold domestically is used for wet cooking, often to culture-based markets. Goatmeat sold domestically for roasting or grilling tends to come from farmed goats.

Many of the markets into which goatmeat is sold are price sensitive and, although goat may be a preferred option, the primary demand is for meat protein.

The number of goats slaughtered has risen significantly in recent years, reflecting increased numbers from favourable seasons and/or increased harvest effort in response to good prices. Goats were a saviour for many pastoralists during recent droughts.

The Supply Chain project aims to:

- Supply chain management and marketing – consolidating profitable supply chains through market development for goats, goatmeat and co-products, along with innovations in processing.
- Industry analysis and planning – understanding the industry, its issues and opportunities to develop shared plans for the future.
- Stakeholder engagement – working with stakeholders to develop and implement shared plan for the future.

While MLA plans cover goat as well as beef and sheepmeat, the Meat Industry Strategic Plan and the national RD&E Strategies do not. Goatmeat production is a small industry in comparison to beef and sheepmeat in Australia, so the industry needs to have clear objectives and well-presented informatic available to show how it fits within the context of red meat production and broad industry initiatives

Australia supports a network of regional natural resource management (NRM) bodies such as Catchment Management Authorities. Each of the regional organisations has a NRM plan including targets for environmental condition and the way land should be managed in order to achieve those targets. There are significant differences in their structures, roles and approaches between States an even neighbouring bodies, and some have regulatory responsibilities as well.

It will also be important for the goat industry to work with regional NRM bodies and their programs, especially in areas with high populations of rangeland goats.

Further information at:

Going into Goats:
http://www.mla.com.au/Research-and-development/Extension-and-training/Going-into-goats

Australian Goat Industry RD&E Strategy – 2012
http://www.mla.com.au/files/4fab0a0f-c31f-49b1-a390-a08500c1bfc7/MLA_Goat_RDE_Strategy_2012.pdf

3. Overview of South Australian Legislation affecting the keeping and harvesting of goats

Two pieces of South Australian Legislation affect the keeping and harvesting of goats. These are:

- Natural Resources Management Act 2004
  (*NRM Act - Feral Goat Policy*, *Determination under Regulation 26(2) of the NRM (General) Regulations 2005*)
- Pastoral Land Management and Conservation Act 1989

Both pieces of legislation are administered by the Minister of Environment, Water and Natural Resources.

NRM Act Feral Goat Policy

Objectives

- Protect environment and primary production from damage caused by feral and escaped domestic goats
- Ensure re-domesticated feral goats are properly confined and do not escape
- Minimise cost of domestic goat industry of implementing measures to achieve above

Implementation

- Must not release from captivity (s179)
- Must comply with control measures as specified by regulations
    - Goats on land without the consent of the owner (feral goats) must be controlled (to a satisfactory level determined by a regional Natural Resources Management Board)
    - Captured goats can be held on the property on which they were mustered for no more than 6 weeks after which they must be destroyed
- Must comply with control measures as specified by regulations
    - Goats on land with the consent of the owner (farmed goats) must be kept in captivity with secure fencing.
    - Chief Officer's Determination can enforce fencing standard with a protection order.
    - Determination can also enforce permanent visible ear tag for >6mths &/or 15kg
- Require a permit for movement if have been held in captivity less than 3 months, unless movement is directly to slaughter
- No goats on offshore islands (excl. Kangaroo Is)
- No goats kept in Flinders Ranges Development Plan Prescribed Area without a permit

Pastoral Land Management and Conservation Act 1989

Objectives

- to ensure that all pastoral land in the State is well managed and utilised prudently so that its renewable resources are maintained and its yield sustained; and
- to provide for—
    - the effective monitoring of the condition of pastoral land; and
    - the prevention of degradation of the land and its indigenous plant and
    - animal life; and
    - the rehabilitation of the land in cases of damage; and
- to provide a form of tenure of Crown land for pastoral purposes that is conducive to the economic viability of the pastoral industry; and
- land that finds a proper balance between the interests of the pastoral industry

Implementation and administered by the Pastoral Board

- The Pastoral Board is collaborating with the SA Arid Lands NRM Board and the SA Murray Darling Basin NRM Board on the development and alignment of relevant policies that relate to the management of pastoral leasehold land.
- determining, managing and enforcing lease terms and conditions with regard to Natural Resources Management (NRM) Plans
- assessing and reporting on the condition of leased land on a district by district basis

- determining lease land management conditions, including the number and type of stock to be run
- the implementation of property plans and other measures to prevent land degradation
- collecting and recording annual stock returns
- The Board may vary the land management conditions and stocking rate of a pastoral lease in consultation with lessees (if a property plan has been approved in respect of the pastoral lease, the variation must accord with the terms of the plan)
- Lessees are invited to comment on their pastoral lease assessment reports and provide any information that may assist the Board in determining the maximum stock level.

Domestic goat grazing study

Since May 2003 the Pastoral Board has been conducting a long-term case study to provide information on the grazing impacts of managed herds of domesticated goats and their management.

Observations and trends from the case study are contributing to the knowledge base on the impacts of domestic goat grazing and have informed the Board's development of its domestic goat grazing policy. The study was conducted on Lilydale Station in the North East pastoral district and involved the annual monitoring of 13 vegetation monitoring sites and 37 individual indicator shrub sites. The case study has shown that fencing specifications in the Board's policy on keeping domestic goats in the rangelands are appropriate for containing domestic goats.

The twice yearly monitoring exercises have now been completed with all collected vegetation data being compiled and presented to the Pastoral Board. This data has been used to assist in the development of a draft domestic goat policy by the Board to be released soon.

4. Issues affecting the productivity and sustainability of the goat industry

The following issues were identified that affects the productivity and sustainability of the goat sector:

- Welfare standards
- On farm aggregation
- Continuity of supply
- Total grazing pressure (TGP)
- Uniform definition of species (feral/domestic) – current legislation treats each species differently
- Responsibility and management of goats (education)
- Product quality improvement by 'holding' goats to reach market conditions

5. Where to from here for South Australia's Goat Industry?

Participants discussed the issues listed and identified that Total Grazing Pressure and expansion of holding areas was an option to investigate further to progress the management, harvesting and supply of rangeland goats in South Australia.

Based on the information provided, the Pastoral Board has the authority to change pastoral leases stocking rate capacity and land use management. It was resolved that a working group develop and provided a pastoral application and management plan to the Pastoral Board for the management and

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enlargement of an existing goat holding area for consideration. An application would be supplemented with a summation of outcomes from producer demonstration studies in Western Districts of NSW and a report from the domestic goat grazing study at Lilydale. It was concluded that if approved that such a submission would also address issues of animal welfare and disease issues and possibly improve product quality.

Participants supported the formation of a working group.

Working group members:

Coordinator	John Rothwell , MLA
PIRSA	Michael Blake, John Fennell, Andrew Curtis
Pastoralist	Pauline Crawford, James Morgan
Livestock SA	Deane Crabb
SA Goat Advisory Group / GICA representative	Peter Lauterbach
(Advisory capacity	John Virtue, Chris Turner)

The working group will assist with the development and submission of a pastoral lease application to the Pastoral Board requesting an enlargement of an existing holding for the management and harvesting of rangeland goats.