Local Consumer Demands and Domestic Supply of Sheep and Goat Meat

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DISCLAIMER

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Contents

Executive summary

Understanding consumer demand critical for the development of the sheep meat and goat meat industries. Past studies have, at a national level, found that diverse backgrounds increased demand for leaner cuts, and price being important to consumers. The links between retail outlets and consumers are critical, with the findings also highlighting that the shopper is also the cook (Star, 2021). However most previous studies of consumer demand have asked consumers directly about their preferences or analysed broad market data. Information about demands has rarely been sourced from the supply chain, such as from butchers and direct retailers.

This study interviewed 25 meat retailers from Western Qld and the Darling Downs along with Brisbane, Central and North Queensland to identify trends in demands for sheep and goat meat. The study was conducted through a combination of face-to-face and over the phone interviews. This allowed a series of open-ended questions to be asked relating to attitudes, consumer demands and market segments. The interviews sought to gain perspectives from the butchers and retailers regarding their experiences with customers. A thematic review approach was taken to analyse the findings with key themes identified as opportunities for diverse markets, attention to market segments particularly in tourist areas, and price impacting on the supply chains.

Current rates of consumption for sheep and goat meat, in conjunction with the tourism market, which has been reported by tourism operators to have grown since COVID-19, present opportunities to increase the volume of sheep and goat meat sold, whilst also maintaining the local market which is more stable and less seasonal. Fat content was less of a concern found by butchers, however, capacity to cook some of the different cuts of meats was identified to be a key issue, with older people more knowledgeable about cooking cheaper cuts of meat than younger people.

Price was identified as a key aspect impacting supply chain factors for butchers, with current high price signals for all meats. There was less interest in marketing lamb cuts because of the low margins. Many butchers noted that they had adapted their supply chain (owned their own land or bought boxed lamb) to mitigate prices that were too high for their customers, but many noted that this was not viable in the longer term for their business.

The results identified markets that are nuanced based on their location, the local population and the tourism demand. The impact of proximity to tourist attractions and access to niche markets allowed some butchers to capitalise on these markets more than butchers in other locations. The local markets based on demographics varied between the two key locations of Outback Qld and Darling Downs – Maranoa, which also underpins slight differences in demands. Key considerations for industry are to better identify the opportunities for increased consumption demands, and to identify how supply can increase, and supply chains adjust, to meet those increased demands.

Introduction

As the sheep and goat meat industry re-builds, understanding consumer demands, segments in the market, and actions to support consumers in understanding the product, is critical. Prospects for the growth of the sheep meat industry is underpinned by the demands of consumers, with key as areas of growth in recent years including local markets, ethnic markets and the tourism market. Past work has focused on understanding consumers' demands for different meats, particularly lamb from Queensland households, with key findings highlighting that factors such as religious affiliation, price and budgetary constraints, and health are drivers of demand (Star *et al.,* 2021).

Prospects for the growth of the sheep and goat meat industry is underpinned by the demands of consumers. *Consumer demands – opportunities for lamb in Queensland* (Star *et al.,* 2021) found significant differences in consumption from people with diverse backgrounds, increased demand for leaner cuts, and price being important to consumers. The links between retail outlets and consumers are critical, with the findings also highlighting that the shopper is also the cook (Star *et al.,* 2021). A key gap is understanding how retailers perceive consumer demand, as retailers tend to tend to be more attuned t geographic and community factors, both of the product and the supply chain.

The importance of understanding consumer demand means allows industry to consider options as it re-stocks and breeds of meat sheep and goats are selected. Leaner lamb cuts may need to be considered, or trimming particular types of cuts further at the butchering stage to appeal to those consumers who are concerned about the level of fat. There may be potential for lean sheep and goat meats to be promoted to health-conscious consumers over the current fat lamb options in Australia.

Retail butchers are the critical interface for industry with consumers. Butchers not only provide the information regarding the meat attributes, but are also the key interface of information-sharing regarding preparation and cooking and are the ones expected to meet the demands of consumers. Therefore, this study aimed to understand the following aspects of sheep and goat meat:

- Locally what is the level of consumption and what have been the demands of butchers, restaurants, and retailers by whom (i.e., tourist versus locals) ?
- What is the quantity, cuts and value of these demands?
- What are the different supply chains for the domestic supply of sheep and goat ?
- What are consumers demanding from retailers?
- Does this reflect the national survey?
- Is there more that could be done for retailers to explain/educate the product to consumers?
- Is there more that could be done for retailers to feedback consumer demand to processors and producers?
- What is the percentage/volume of cuts that are sheep and goat?
- What do retailers value in marketing different cuts of sheep meat and goat meat?

Background and context

The improved seasons, high costs of restocking with beef cattle and the introduction of exclusion fencing to protect from wild dogs have resulted in the opportunity for landholders in southern regions of Queensland to produce sheep meat or goat meat; solely or in conjunction with a wool enterprise. While many of these areas have previously run sheep until the 1980s, it is unclear if demands for lamb goat and sheep meat are substantial enough to justify pastoral enterprises restocking with sheep rather than cattle.

Sheep numbers in the region have declined since 2007-08 by 1.5 million head due to lower wool prices and increased wild dog attacks. Queensland has invested heavily in cluster fencing to reduce stock losses due to wild dog predation. Against a background of declining sheep numbers, with numbers dropping from 17 million in 1990 to just 2 million in 2016, the Queensland councils of Paroo, Winton, Longreach, Barcoo, Goondiwindi, Balonne, Quilpie, Maranoa, Western Downs, Barcaldine, Southern Downs and Murweh have all been successful in receiving funding for exclusion fencing (Government, 2020) and have, to date, constructed 48 clusters across the landscape. There is now an estimated 20,679 kilometres of fencing currently proposed or under construction, excluding 9,874,380 hectares.

The goat meat industry in the pastoral regions is largely based on the utilization of natural pastures and species that goats can browse. Goats in Australia are adapted to eat a variety of plants, including wattle, gum trees, mulga and prickly acacias. Shrubs, specifically mulga (Acacia aneura), hopbush (Dodonea viscose) and broom brush (Apophyllum anomalum) contributed more than 50% to the diet of goats in north-western NSW and Qld (Nogueira et al., 2016).

Livestock production for meat in Australia represents 45% of the overall agricultural Gross Domestic Product (GDP) of Australia which currently makes up 3% of the country's total GDP. Of the livestock raised in Australia some are processed for domestic use while a large number are processed in Australia for export or, in some cases, are exported as live animals to be processed offshore. Sheep and beef meat produced in Australia is worth $17 billion to Australia's economy (Meat and Livestock Australia, 2020); however, currently numbers of both sheep and cattle are down on previous years due to the impacts of drought and competitive markets for meat and fibre globally. Australian adults consume 40.9 kilograms (kg) of meat on average annually, predominantly made up of beef (30.9kg), lamb and mutton, pig products and poultry (Meat and Livestock Australia Limited, 2018).

Production of goat meat in Australia is still often conducted on an ad hoc basis with 71% of goat meat farmed out of New South Wales in 2017 as a harvest enterprise (Figure 1) with the remaining 29% a result of semi-managed or managed farms (Figure 2) (Meat and Livestock Australia Limited, 2018). However, despite its availability, the consumption of goat meat in Australia remains relatively low with the majority of goat meat processed within Australia being exported (Meat and Livestock Australia Limited, 2018).

Rangeland goats in pastoral regions are an important source of income. Stocking rate varies considerably within pastoral regions, rainfall zones and use of exclusion fencing. To date, rangeland goats have been used as a source of income and to control weeds on many properties.

The sheep and goat meat industry in Queensland is starting to re-build after years of drought and with the cost of cattle being prohibitively expensive to re-stock many producers are looking to expand their sheep enterprises.

Western Queensland and the Darling Downs Maranoa have the largest flock of sheep and subsequent slaughter level, contributing just over $11,000,000 (Western Qld) and just under $7,000,000 (Maranoa) to gross domestic product in 2016.

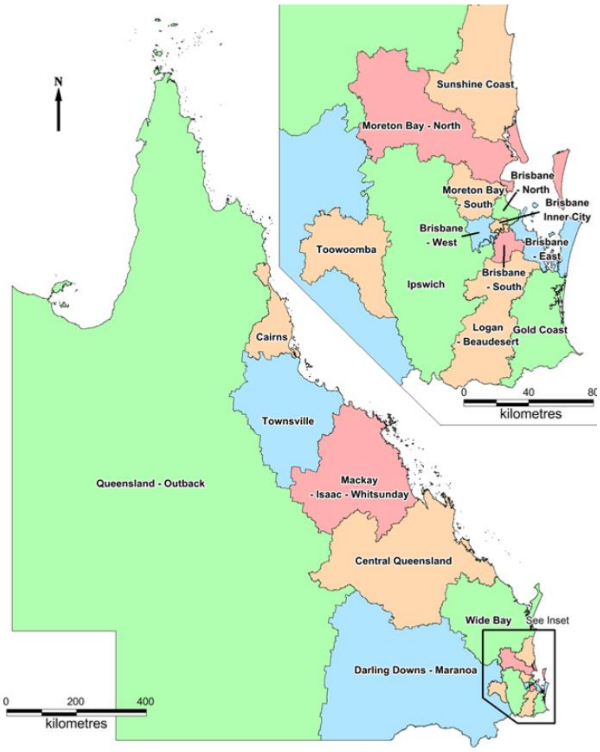


Figure 1. Location of the key sheep and goat meat areas of Outback and Darling Downs- Maranoa.

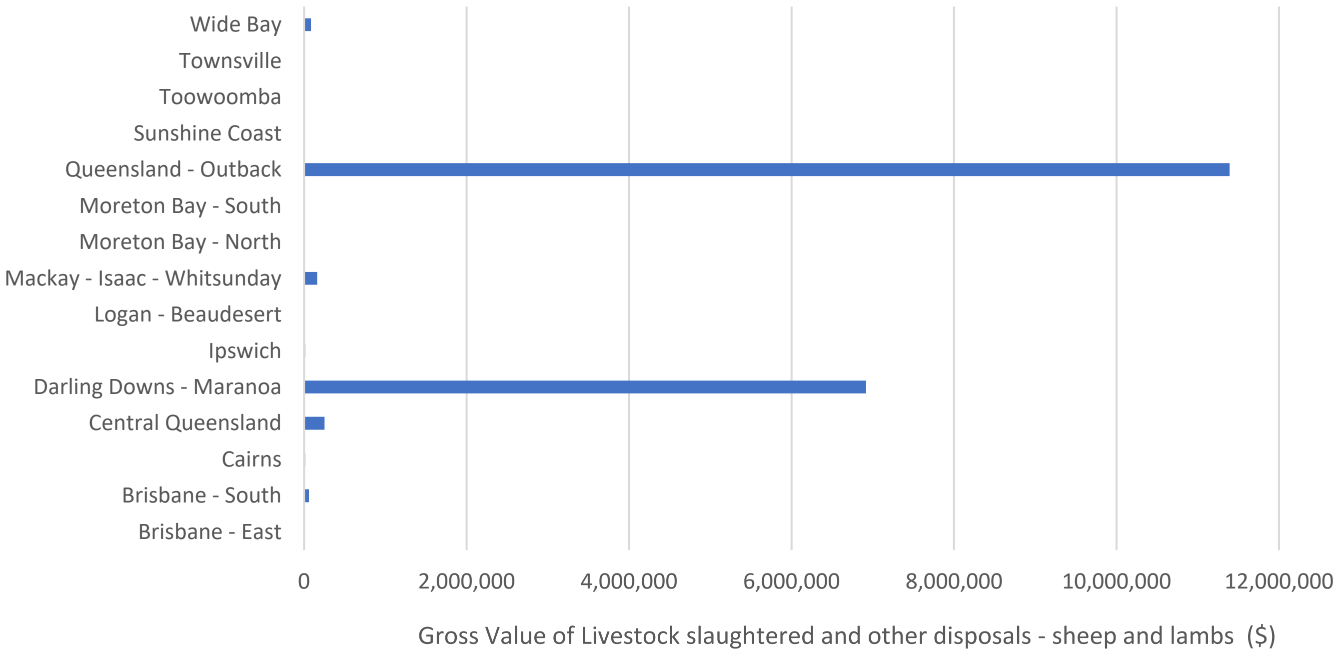


Figure 2. Gross value of sheep and lambs in relevant locations.

Methods

To understand the consumer demands placed on butchers and retailers, expert information was collected to assess and better identify the key markets and the segments that are purchasing sheep meat and goat meat. Retailers and restaurants who supply sheep and goat meat produced in Queensland, along with other retailers supplying meat in the larger metropolitan areas, were identified to be interviewed. 25 interviews were completed in a combination of in-person and over the phone. The interviews asked butchers and retailers a combination of open-ended and closed-ended questions. These questions were tailored in relation to the business, enterprise demographics, location, where they source their product from, what is the demand from customers and for what cuts, who do they view as their key market, and where they view the domestic demand for sheep and goat meat is heading.

A key challenge with the analysis was that the sample size was too small for statistical analysis, and the diversity of interviewees resulted in the descriptive analysis as not being appropriate. Instead, the information gathered through the interviews was analysed through thematic content analysis, which can identify patterns in qualitative data/information. Figure 3 provides a guide to the steps involved in thematic analysis.

- Step 1 • Familiarise with the data
- Step 2 • Creating initial codes
- Step 3 • Searching for themes
- Step 4 • Reviewing themes
- Step 5 • Defining and naming themes
- Step 6 • Production of report

Figure 3. Thematic Content Analysis.

Thematic Content Analysis is the most foundational of qualitative analytic procedures and in some way informs all qualitative methods. The researchers grouped and distilled from the texts a list of common themes in order to give expression to the commonality of voices across participants. Every reasonable attempt has been made to employ names for themes from the actual words of participants and to group themes in a manner that directly reflects the texts as a whole. Initially, interviews were typed out into transcripts where the key points were highlighted from each interview. These were then grouped across the 25 interviews.

Five days later, this process was re-run without looking at the initial grouping of themes, and categories were then revised, with categories collapsed or subdivided as appropriate. The initial interviews and the themes were then reviewed to assess if they reflected the interviews as a whole. These themes were then named and are reported in the remainder of this report relative to the consumer findings from Star et al (2021).

Survey participants

A total of 25 retailers were interviewed from Western Qld and the Darling Downs along with Brisbane, Central and North Queensland. The interview timeframes ranged from 20 minutes to 2 hours and were done through in-person interviews or over the phone when this was not possible. The interviews were completed by Fleur Morrish and Megan Star across a number of butchers and retailers across western, central, southern downs, and Brisbane areas. This allowed a series of open-ended questions to be asked relating to attitudes, consumer demands and market segments. The interviewer sought to gain perspectives from the butchers and retailers regarding their experiences with customers. It also allowed participants to contribute to the interview.

All aspects of survey design and implementation adopted social research best practice and adopted the five ethical responsibilities towards survey participants, namely voluntary participation, informed consent, no harm, confidentiality and privacy (De Vaus, 2002). The surveys were documented after completion in preparation for analysis, and were completed under Ethics Project Number 22983.

Results

The retailers who were interviewed had diverse enterprises and different processes and approaches to market segments and consumer demands. There were three main models identified (which will be discussed further in *Supply Chains of the Sheep and Goat Meat Industry*); this included (a) vertical integration across property production, processing, wholesaling and retail stages; (b) vertical integration including increased value-add before the animals are slaughtered through ration feeding; (c) purchasing bodies and boxed products to sell, with variations in between. Due to this variance, butchers were able to meet demands differently and at times serve different market segments. The results have been grouped into consumer segments, consumer demands and consumer knowledge. Each of these has several components that will be explored in further detail below.

Consumer segments

Local market

Given the two largest sheep and goat producing areas are western Queensland and the Darling Downs-Maranoa the demographics of these regions were explored to identify what are the key drivers for this market segment. These two regions were where the majority of the interviews were targeted. The last census was completed in 2016 which was used to provide insights, although it is acknowledged there may be some slight changes.

Outback

Outback Qld covers an area of 1,183,182.7 km^2 . It encompasses the main towns of Charleville, Longreach, Julia Creek, Cloncurry, and Mt Isa, and runs from the Gulf of Carpentaria to the border with NSW. The region has a median age of 33, and a median weekly total household income of $1,361 with a median monthly mortgage repayment of $1,500 or weekly rent of $140 (Table 1). Those between the ages of 35 and 44 had the largest proportion (18%) of high-income earners ($1,750-$3,000 or more) with those between the ages of 65 and 85 years or older having the lowest weekly income (48%). Those in the high-income bracket were also dominated by professionals (1,591) and managers (726) with higher qualifications, and technicians and trades workers with a certificate 3 or certificate 4 qualifications (1,979).

Employment is predominately in industries of mining (5,981), agriculture, forestry and fisheries (4,450), and public administration and safety (4,337). Education and training (1,457) and health care and social assistance (1,415) have the largest number of professionals followed by public administration and safety (542), and agriculture and fisheries have the largest number of managers (2,454) (Figure 4). 35% of residents identified as Australian or Australian Aboriginal ancestry with a further 22%, 8% and 6% having ancestors in England, Ireland or Scotland (ABS, 2016b).

Table 1. Proportion of population by age group and income proportion of each age group in SA4 Outback region.

	15-19 years	*20-24 years*	*25-34 years*	*35-44 years*	*45-54 years*	*55-64 years*	*65-74 years*	*75-84 years*	*85 years and over*
Total persons	4,799	5,607	12,140	10,202	10,707	9,231	5,489	2,197	663
Percentage of total population	6%	7%	15%	13%	13%	12%	7%	3%	1%
Negative/Nil income	32%	6%	5%	4%	5%	7%	5%	4%	5%
$1-$149	14%	3%	2%	2%	2%	2%	2%	2%	3%
$150-$299	9%	13%	9%	9%	9%	10%	10%	9%	7%
$300-$399	4%	6%	5%	6%	6%	8%	20%	25%	22%
$400-$499	5%	6%	5%	5%	5%	7%	16%	23%	29%
$500-$649	6%	9%	7%	7%	7%	7%	8%	7%	8%
$650-$799	4%	10%	8%	7%	7%	7%	6%	5%	3%
$800-$999	2%	10%	8%	7%	9%	8%	5%	3%	3%
$1,000-$1,249	1%	8%	9%	8%	9%	8%	4%	2%	1%
$1,250-$1,499	1%	5%	7%	6%	6%	5%	3%	1%	2%
$1,500-$1,749	0%	3%	5%	6%	6%	5%	2%	0%	1%
$1,750-$1,999	0%	2%	4%	5%	5%	4%	1%	1%	0%
$2,000-$2,999	0%	2%	9%	10%	8%	6%	1%	1%	1%
$3,000 or more	0%	0%	2%	3%	3%	3%	2%	1%	0%

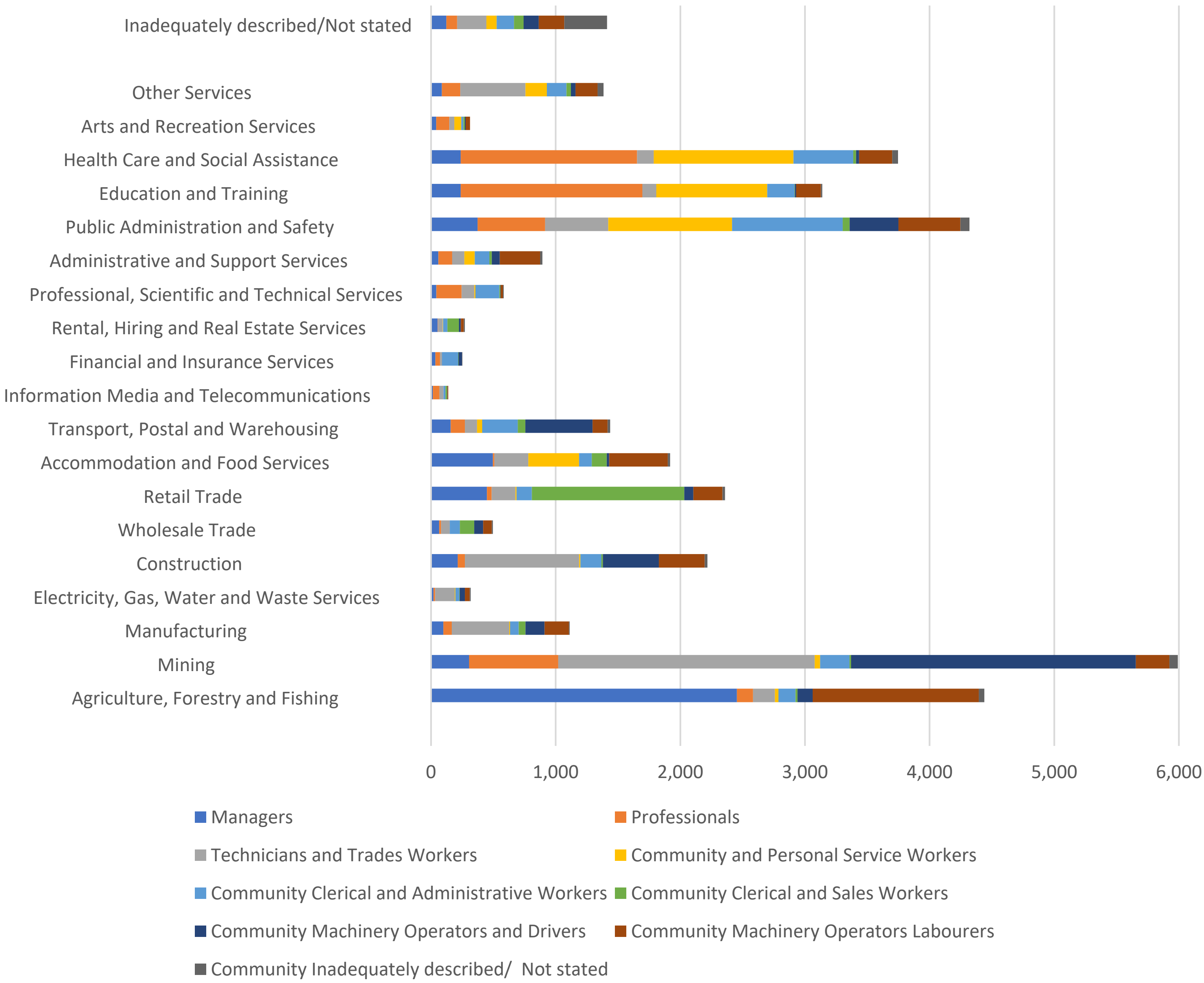


Figure 4. The number of employment roles in each industry in SA4 Outback region.

Darling Downs-Maranoa

The Darling Downs-Maranoa statistical area encompasses 166,340 km^2 and the southern Queensland towns of Toowoomba, Roma, and Goondiwindi having a resident population of 126,289. The median age is 41 and the total weekly household income is $1,129 and median mortgage repayments are $1,300 per month and $860 per month for rent. The region has 12% of those aged between 35 and 44 years old with an income of between $1,750 and $3,000 or more. Those between the ages of 65 to 85 years old had much lower incomes, with 35% of those between 65 and 75 years old having an income of between $1 and $400 per week (Figure 5).

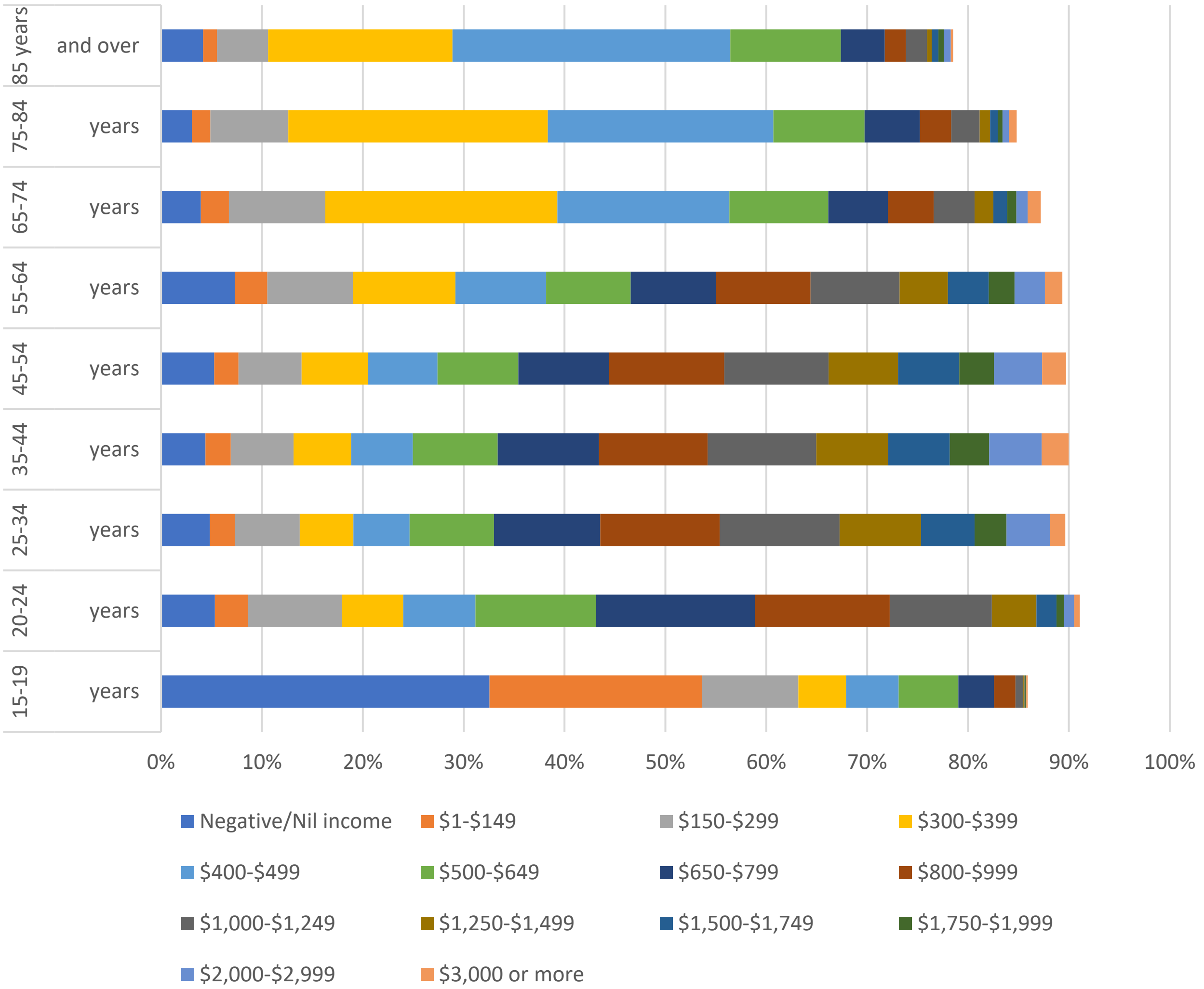
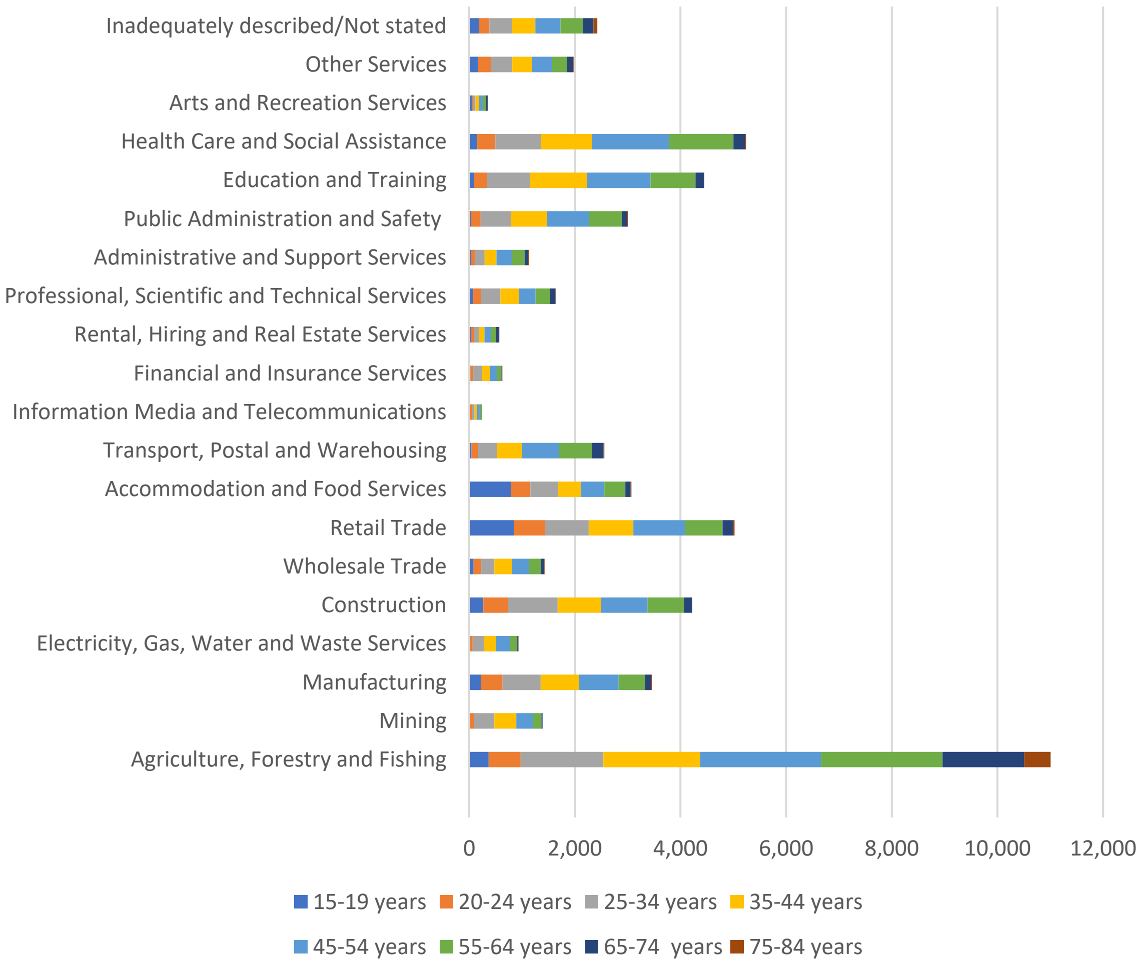


Figure 5. The proportion of age groups earnings on a weekly basis in the Downs-Maranoa SA4 Division ($/week)

Agriculture forestry and fishing is the largest industry employer across all age groups apart from retail and accommodation and food services for those between 15 and 24 years of age. Construction and health care and social assistance were also large employers for the region.



The region has 45% of family households being a couple with no children, 40% being a couple with children and 14% being one-parent families (Figure 6).

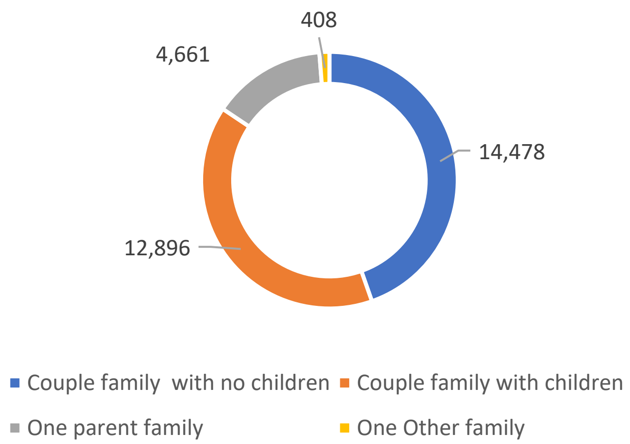


Figure 6 Proportion of family household composition

Of these household compositions, there are 7,615 households with a couple and children that earn between $1,000-$3,000 per household per week, with a further 6,7111 couples with no children having similar levels of household income. There are a smaller number of couple households with children earning between $3,000 and $4,000 or more per week (1,678) and 50% of one parent families earning between $500 and $1,240 per week per household (Figure 7).

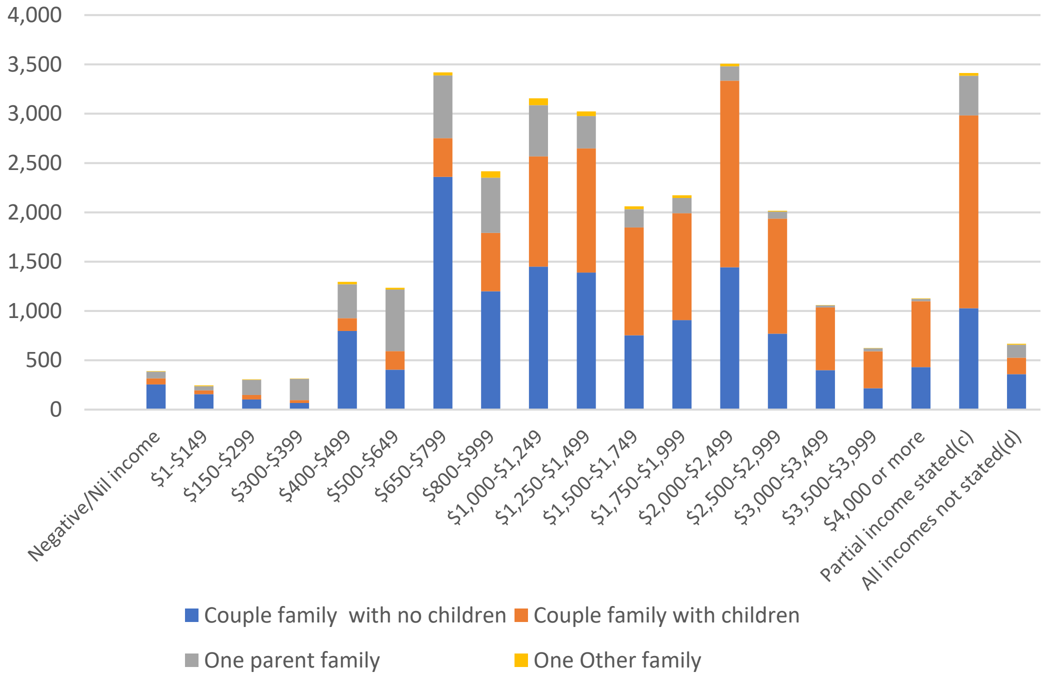


Figure 7. Household composition and weekly income ($/week)

Interview responses

Of the 25 butchers and retailers who were interviewed, there were some clear themes that emerged as important in the local market consumer segment. These were cuts, age of the consumer, the influence of exposure from TV media, and price.

The local market for all butchers was dominated by sheep meat and was important particularly for shoulder chops, mutton, and offal cuts. Although lamb was the most preferred cut and was stocked by all butchers, locals were more willing to have older animals (mutton), cuts that were more price-driven (shoulder chops) and tended to utilise more of the offal cuts (heart, lambs fry). Many butchers observed that local consumers who were older were much better at utilising cheaper cuts of lamb or mutton such as neck chops or offal such as lambs fry. However in the Darling Downs-Maranoa region some butchers did not carry any of the older cuts of sheep meat as they felt there was no demand for them. Three (12%) butchers noted that those who had grown up eating Merino breeds could taste if it was not Merino, although for the remaining retailers they did not note that customers could taste the difference between breeds.

The local butchers also provided slaughter and processing services for station owned animals. For some, this was seen more as a community service (12%) as many also supply stock to be slaughtered for retail purposes. For others they considered it to be a viable business proposition. This market was regular and although was seen to be at times more prevalent when stations were going to be busy times such as mustering, it was generally highlighted as very reliable. It must be noted that not all butchers have the capacity to do this with 20% of the sample not having processing facilities. Some of these landholders were operating a paddock-to-plate operation with their own customers (e.g. farm tourism) and packaged orders that are meet once a month. Other butchers have developed their own direct delivery service once a week to larger towns.

Wholesale

Also important for many butchers were nearby restaurants, local foodservice providers (hospital), tourism providers, service stations and other butchers, was as this formed a critical part of their customer base. This market provided as much as 25-50% of total sheep meat demand for some butchers. The margins on wholesale are less, however, they allow for product utilisation and for turn over. This market fluctuated more with the tourist season for those in the outback (44% of those interviewed) and was not as common for butchers in the Darling Downs-Maranoa region.

Four butchers (16%) noted that with the price of lamb increasing, many local consumers would switch to purchasing mutton as they were aware that the age difference was not particularly large but the product would be significantly cheaper. It was also noted that the introduction of supermarkets in small towns impacted on the local butcher, although in some case it was a separate local butcher enterprise supplying the supermarket.

Price and budgetary constraints were identified by 84% of those interviewed as key drivers for reduced consumption of lamb, likely because it is moving from being a staple food to more of a luxury item for Australian households. Due to the price of lamb and the low margin for butchers, marketing lamb was not something they deemed viable, particularly if they were not processing their own but rather buying whole bodies wholesale.

There may be the capacity to provide improved education to consumers on the cheaper cuts of lamb, regarding the best way to prepare and cook the lamb. A preparation approach that utilises all cuts of the lamb may appeal to a broader range of consumers. Five butchers noted that TV shows utilising unique cuts had driven local customers to seek these from them to replicate the dish, highlighting the power of TV marketing.

A key finding from past work (Star *et al.*, 2021) was that older age groups were significantly reducing their consumption of meats with age bracket, largely for health reasons. This is not uncommon and has also been found across the beef industry (Star *et al.,* 2020). Yet older people may be the larger consumers of more traditional cuts such as hogget and mutton because of familiarity and lifestyle patterns from when those consumers were younger. They also are more likely in these local markets to have a lower weekly income (see Table 1) which also may be a key driver of the consumption of cheaper cuts.

Younger participants were found to be more likely to eat more lamb than older participants. Although income was not significant, it may be linked to family circumstances such as, formal dining as a family unit, the economics of having larger units of lamb (roast) shared across the family, or having children who enjoy eating lamb (cutlets). This cohort may also be looking for alternative cuts that are easy to prepare for their family.

Goat meat was not highly consumed locally with only a few locals specifically seeking it out for religious reasons (further information is found in the ethnic market segment). One butcher wholesales goat to a local restaurant that has a specialty goat dish. This has driven local consumers to demand goat to again replicate this dish, highlighting that education and exposure to the meat may further increase demand for it. Other butchers have utilised Kalahari reds or boar goats and have broken down the carcass in the same manner as lamb with consumers preparing cuts in a similar manner to lamb.

Tourism

The tourism market is a critical component to Outback Queensland with 823,000 visitors per year ending December 2020, staying on average for 5.2 nights. Of these, 28% are for holiday, 16% visiting friends and relatives, and 47% for business. Over the past three years, the intrastate market made up 90% of domestic visitors to the region (down 2.1% on average over the past three years to 741,000). The largest intrastate market is Brisbane, up 2.2% on average over this period to 197,000 (Toursim and Events Queensland, 2021). The tourism season in Outback Qld is from late April to late September and is a key driver of demand, with butchers noting that business doubles during this time.

In 2019, Tourism Qld asked locals in Outback Qld about their attitudes towards tourism in their local area. For each question, they picked a statement that best reflects their view. This showed that two-thirds of Outback residents 'really like' tourists; 71% of residents want more tourists and 76% want continued tourism development growth. The proportion of residents that agree with these statements is significantly higher than the Queensland average (Toursim and Events Queensland, 2021).

This may reflect the relatively high level of residents that interact with tourists. A third of Outback residents meet tourists around town and talk to them, and 19% interact with them as part of their job. The tourist market has had a notable shift since COVID-19 which has limited travel internationally and increased the uncertainty of interstate travel. The market is fragmented into two key segments consisting of young families from Brisbane and other capital cities seeking an outback experience, and the older grey nomad group of tourists. Within this, localities have tourism based around themes such as Waltzing Matilda and Stockman's Hall of Fame, which portray the traditional outback lifestyle of grazing sheep and cattle. Separately the Darling Downs-Maranoa have tourists which are of the baby boomer age group seeking a different offering and as a part of this may be re-connecting to a previous time in their lives.

The demand from tourists from May to September doubles the demands for foodservice sheep meat and retail sheep meat. Tourists who were in locations such as Longreach and Charleville were identified as seeking the authentic stockman's experience of a lamb stew and other products from tourism operators. Grey nomads typically were identified as often seeking more cost-effective options, with young families from capital cities having a larger budget and seeking more higher-value cuts such as cutlets or racks of lamb.

Of the butchers, 85% identified that locally sourced product was key to their experience with tourists seeking to understand where the product originated. Although province was often requested by tourists, butchers were hesitant to brand meats specifically to a property in the Outback region as drought periods often required meat to be purchased from other areas. The Outback region also noted that many customers noticed the increase in flavour from the meat they could supply. Butchers noted that they had the relative advantage of a drier climate and, therefore, low parasite pressure, which may enhance the flavour.

Goat meat was sought after by a small portion of tourists, with three butchers noting that some consumers were demanding it after seeing goats locally on their travels. However, one butcher noted that there was poor understanding from butchers on how to best prepare goat and the best way to slaughter the animal.

Ethnic market

The ethnic market is an area where 90% of butchers identified an opportunity for increased market and interest. 30% of the butchers have already established markets in coastal cities and capital cities, and 50% of butchers are being asked to slaughter goats for local families. Butchers saw goat as a clear opportunity as it is a product that is often demanded with bone in and therefore has low wastage. However, many noted that they were not certified for halal certification, which was something they would seek to change.

There was variation in consumers' demands for how they want it cut up (diced, bone in and butchered like lamb, skin-on and skin-off) with different consumers demanding different methods at different times. Methods of cooking goat and the best approaches were also identified by a number of butchers and retailers as a gap that they could not provide to their consumers.

In past work, it was identified that there was also a significant difference in lamb consumption between religious groups. It is often identified that Hindus consumed more lamb as did Buddhists and those of Islami faith; however, it was unclear where in Queensland these communities were based. Of the migrants to Queensland that identify as Buddhist, Hindu or Islamic, those that identified as from North-East Asia (i.e. Japan, Korea, Mongolia, Tibet), South East Asia (i.e. Philippines, Nepal, Pakistan, Punjab, Sikh, Sri Lanka) North African and Middle East (i.e. Egypt, Syria, Morroca, Sudan) as well as Oceanian (i.e. Fuji, Tonga, Tahiti) the majority are from North-East Asia (Figure 8) (ABS, 2016a).

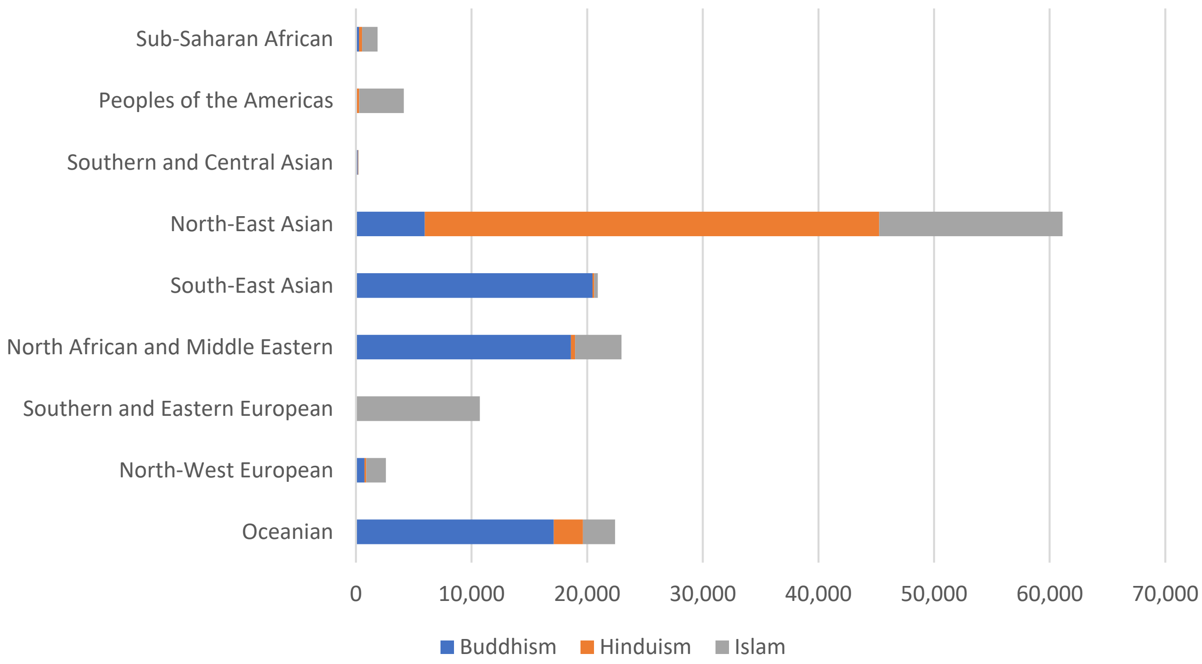


Figure 8. Migrant communities and religious beliefs.

Religious celebrations and certification

There are large portion of descendants from North-East Asia and Southern and Eastern European who identify as following the Islamic faith. Ramadan is the ninth and most sacred month in the Muslim calendar, a time of reflection, piety and charity (even for those who are not particularly religious). The month involves fasting from sunrise to sunset without even water. The dates change every year because the celebration is linked to the lunar calendar. The first day occurs with the sighting of the new moon and the last when the moon has reached its full cycle. The end of the month is marked by Eid al-Fitr (the feast of breaking the fast), which runs over three days when families and friends gather to celebrate, and traditional foods are served to the guests. Traditionally goat kids (31-35kg live weight) and lambs (30-34kg dressed weight) are usually in high demand.

On Eid al-Adha (Sacrifice Day), all adult Muslims who do not have any financial constraints are obligated to sacrifice a goat or a lamb and distribute the meat to the needy. Sacrifice day lasts for three days and yearling goat kids and six-month-old lambs are in high demand before this holiday. However, large market kids/lambs and older goats/sheep are also used. The animals must be healthy, non-pregnant and blemish-free (no broken horns, open wounds, lameness and must have intact ears). Some consumers prefer intact male animals. The age of the animal is more important than the weight, however, younger and heavier animals are preferred. A key religious requirement is that only animals slaughtered and processed halal can be consumed.

Halal certification processes are in place in Australia. These processes include how the animal is treated and managed from slaughter. Only authorised slaughtermen can perform the halal slaughtering procedure for halal products. Stunning is required to be by a method that is recognised as being reversible (e.g. electric or percussive). Animals shall receive the halal cut expeditiously after stunning to ensure they do not regain consciousness (Australian Meat Industry Council, 2005).

Establishments wishing to produce halal meat need to satisfy the Approved Islamic Organisation (AIO) that the establishment's procedures ensure segregation of halal from both non-halal and haram. All areas in which halal product is to be slaughtered, handled, processed, packed and stored must be addressed in the approved arrangement requirement, as must all aspects (animals, meat, personnel and equipment) pertinent to segregation of halal product. The establishment's Approved Islamic Organisation will need to approve these halal procedures prior to the commencement of halal production. Many of the butchers noted that they would be looking to seek halal certification for halal in the future.

The Chinese market (holidays for Chinese community) also contributes to demand for goats but to a smaller extent. The preferred weight range is 30-35kg live goats.

Goat meat is popular among Filipino families. Goat meat is cooked in several ways, like stew or roast. It is served during festivities, including birthdays, baptisms, weddings, reunions, and religious festivals such as Christmas or feast day of the community's Patron Saint. It is also served as a regular dish in everyday meals or to entertain a guest. The preferred live weight range is 30-35kgs.

To better understand where these markets are in Queensland, the ABS data was used to map out the local government areas where peoples of these three religions live in, which are linked to their ancestry. Brisbane city had the highest level of ancestry across all three religious beliefs. In regional areas, Bundaberg, Cairns, Gold Coasts, Sunshine Coast, and Townsville also have larger populations with this ancestry (Figure 9) (Local Government Areas that had no residents of these religions were removed from the data set). This detail provides insights into the potential market for goat and sheep meat (ABS, 2016a)(Figure 10).

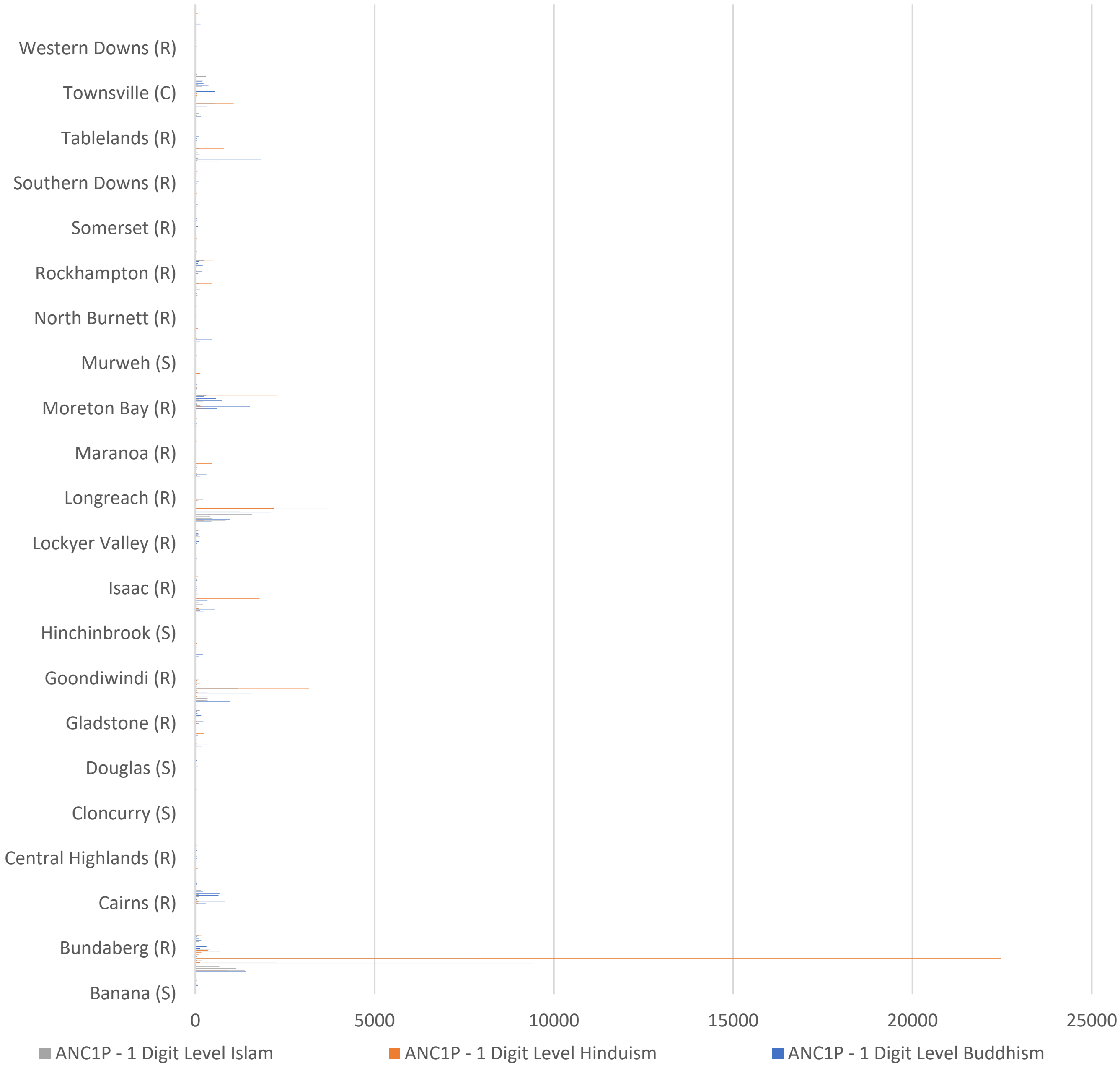


Figure 9 Local Government Areas which have migrant communities with Islamic, Hindu and Buddhist faith(ABS, 2016a).

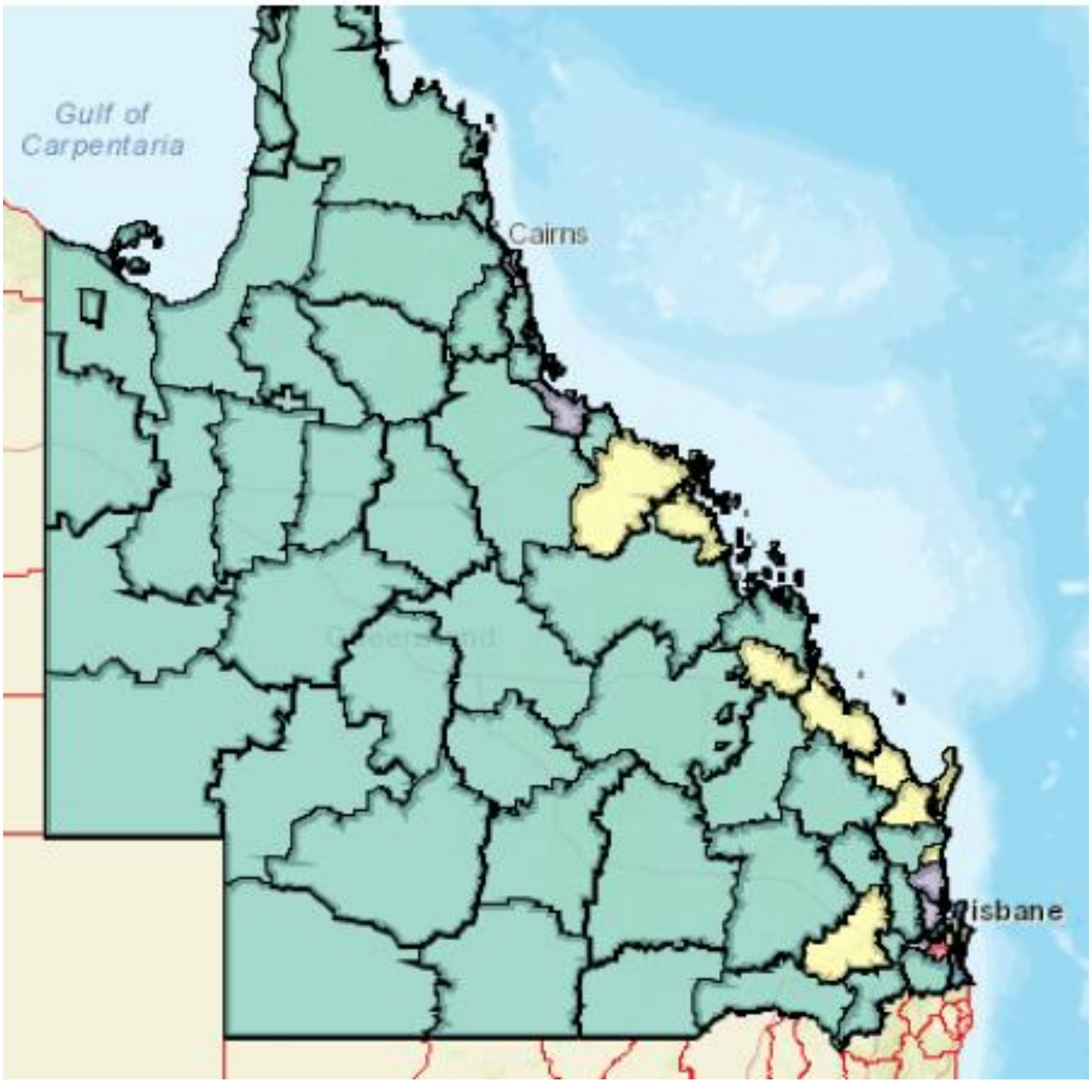


Figure 10. map for Qld Local Government areas which have large numbers of migrants of Islamic, Buddhist and Hindu beliefs(ABS, 2016a).

Consumer demands

Cuts of meat

Butchers are willing to break lamb down to what their customer's demands are; however, there are some cuts that are more limited on the animal and require additional orders boxed and ordered through wholesalers to be filled to meet this demand. For example loin chops was a cut that a number of butchers noted that they often had to supplement their existing supply with.

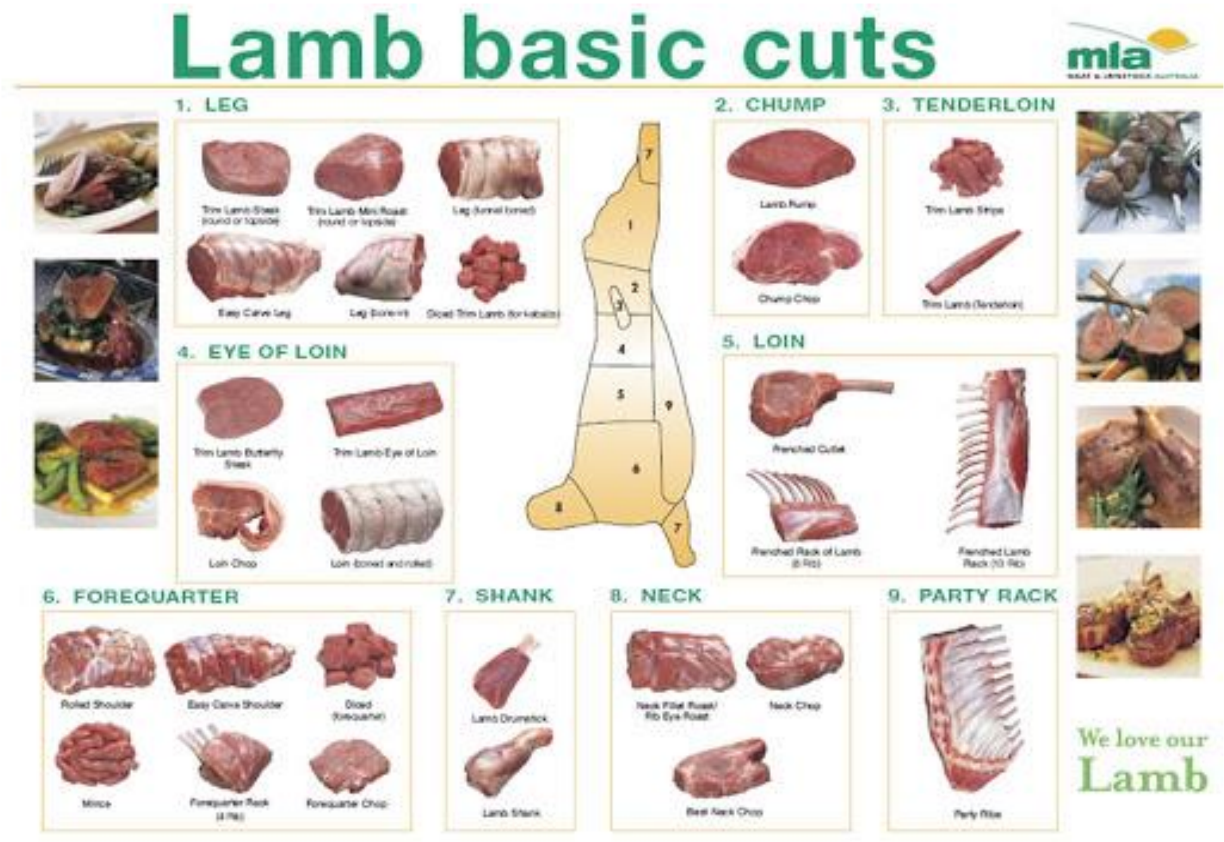


Figure 11. Lamb cuts of meat (MLA Accessed 20201)

Butchers found that all their consumers have had experience with lamb and sheep meat. Local butchers which supply wholesale meat and local consumers, identified that throughput ranged from 50 to 100 lamb bodies per week for those who are slaughtering. The smaller 20kg bodies were the most demanded, as this is what best met consumer expectations about size and what was practical for cooking (i.e getting a leg roast in the oven). Mutton was demanded more in the Darling Maranoa area and in some outback butchers where price driven consumers were seeking mutton. Goats were not regularly demanded by the local or tourist market.

Table 2. Range of bodies that butchers sold each week.

	Local/Tourism	Wholesale
Lambs 18kg-24kgs	20-50	50-100
Mutton 25kg-35kg (2 teeth)	5-6	
Goats 14-16kgs	*	5-30

*Not regularly slaughtered

Diced lamb, loin chops and roast cuts had the highest demand followed by shoulder and neck chops. Diced lamb and roasts were in high demand for tourists as they often have the outdoor campfire cooking experience where these cuts can be cost effective for large groups. Cutlets were often demanded as a high quality cut which was expensive however butchers noted it was also easy to cook for people who were traveling to BBQ. Given shoulder and neck chops require slow cooking over long periods of time these were least in demand by the tourist market

(Table 3).

Table 3 Average Range of consumer demands per week for different cuts by different markets.

	Local	Tourism
Diced lamb	30-50kgs	100-200kgs
Loin Chops/cutlets/lamb rack	20-60kgs	100-130kgs
Shoulder and neck chops	10-40kgs	40-60kgs
Roast	40-70kgs	60-100kgs

Price

The main drivers of changes in lamb consumption have been identified as prices and budget pressures. Queensland lamb supply has diminished over the past five years due to drought impacts, with slaughter rates as negative 11% in 2019, reflecting that lamb had to be imported from southern states (Figure 10).

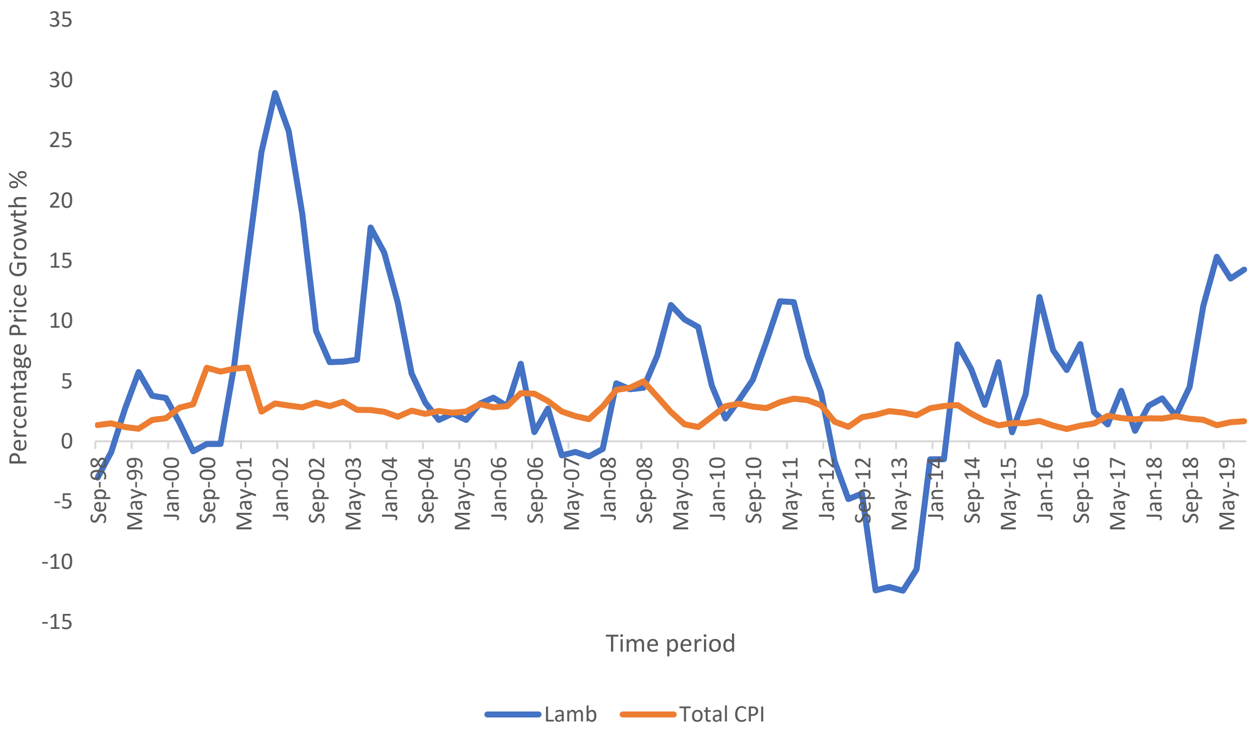


Figure 10. Percentage of price growth (%) and slaughter rates 2011-2019.

Currently, the price of lamb ranges based on cuts and location from $16 per kilo for the lower demanded cuts through to $38kg for the premium cuts. This highlights the challenges for the local communities to afford lamb, and the butchers also do not receive a large margin which is reflected in their hesitancy to market lamb.

Health

Butchers did not notice concerns about fat content on the majority of consumers, however, one did note that they had one customer advised to give up red meat, which they did for a period of time, however, then consumed meat again. Potentially because of the luxury status that consumers treat the price of lamb and the fat contents as an indulgence.

Consumer knowledge

Sheep Meat

Butchers noted that the margins are so low on lamb that they have little incentive to market it. It was noted that particularly younger customers who had a poor understanding of how to cook different types of cuts and offal found it easier to cook lamb. Butchers did notice that TV shows stimulated consumers to try different types of cuts that they may have not previously been willing to try.

Goat

Butchers noted that rangelands goat was used more in wet dishes and Kalahari red, and boar goats were used more in lamb type dishes such as bbq and roasting. In one town, the local hotel preparing a goat curry has stimulated customers to want to try more goat; however, training is required both from the butcher and the consumer.

One butcher noted that he would like more information regarding breaking down goat best to meet the demands of the ethnic market. He noted that poor communication occurred when he previously attempted this, and he did not understand how it was being cooked to learn if there was a better way of preparing the carcass.

Retail supply and feedback

There are many different combinations of retailing that existed, with some butchers having control over the majority of the supply chain and others engaging in the wholesale market to meet their demands (Figure 12). There were four common approaches.

1. One was butchers having their own property and subsequent stock to process and then sell either through retail or wholesale. Some did this to manage price through to their retail price.
2. As the lamb margins are so low, wastage is critical for all butchers, with some ordering dressed whole bodies which they then broke down and either wholesaled or sold through their own shop.
3. Some butchers purchased boxed product to supplement their existing animal which they processed.

4. Other butchers operated more like a direct retailer where by they purchased boxed meat that they sold retail in the town and also to meet wholesale demands.

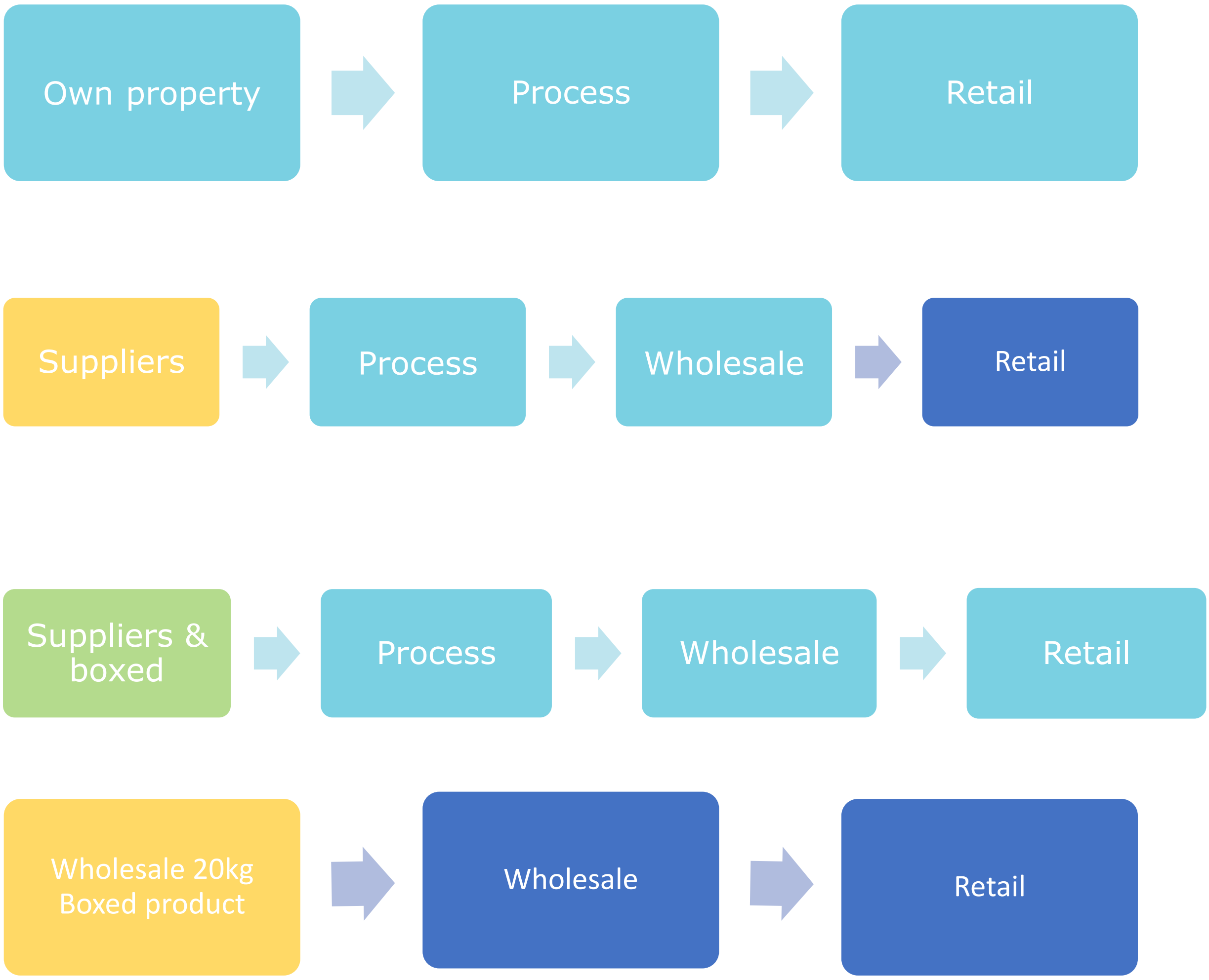


Figure 12 Four key different combinations for butchers/retail supply chains found in the interviews (The different colour represent when there is a different entity or owner/operator in the supply chain.

Although there was a variance in the supply chain each butcher was conscious of ensuring that they "stuck to their patch" of customers to ensure that they all remained viable. The interviewers noted that butchers felt that the supply chain was fragile given price sensitivity and that they relied heavily on their informal networks to ensure supply of different cuts and to ensure customer expectations were met. A number of butchers worked together even although they were located in different towns. Some of the butchers ran a combination of shop front retail and online weekly orders, whereas others ran the shop front and then wholesale packed for another entity to complete weekly orders.

There was a notable difference in attitudes between those who recently started in the industry and those that were mature businesses or close to exit. All butchers apart from one noted the difficulty in attracting staff which were either trained or at apprentice level. The only one that noted that it was not an issue however noted that the industry currently lacked diversity, and needed to attract more staff long term.

Discussion & Conclusions

This report aimed to better understand the demand placed on butchers and retailers by customers regarding sheep and goat meat. Interviews were held with a number of butchers across western Queensland, Darling Downs and Central Queensland. The interviews revealed that market segments, price cuts and consumer knowledge need to be considered as the sheep and goat meat industry grows in Queensland.

The results identified markets that are nuanced based on their location, the locals and the tourism demand. The impact of proximity to tourist attractions and access to niche markets allowed some butchers to capitalise on these markets more than butchers in other locations. The local markets, based on demographic differences, varied between the two key locations of Outback Qld and Darling Downs – Maranoa, which explains slight differences in demands. Key considerations for industry are to better identify the opportunities for increased consumption demands, and to identify how supply can increase, and supply chains adjust, to meet those increased demands.

The supply chains for butchers are very fragile with the current high prices for all meats. There was less interest in marketing lamb cuts because of the low margins. Many butchers noted that they had adapted their supply chain (owned their own land or bought boxed lamb) to mitigate prices that were too high for their customers, but many noted that this was not viable in the long term for their business.

The demands by consumers varied slightly from the national consumer survey. Consumers were less concerned about fat in the meat than the national survey; however, this may be related to income and treating lamb as a luxury meat. There was alignment to the national survey where demand was linked to particular ethnic groups and religious beliefs, with some butchers already having established markets in local government areas with a higher concentration of ethnic groups. Consumer knowledge was lacking regarding using unusual cuts of sheep and goat meat in areas of preparation and cooking. This is an area where retailers would benefit from understanding the best way to cut up, prepare and cook different cuts of goat meat.

References

ABS. (2016a). ANC1P - 1 Digit Level and RELP - 1 Digit Level by STATE (UR). *2016 Census - Internal Migration*.

ABS. (2016b). General Community Profiles. from ABS

ABS. (2020). 75030DO001_201819 Value of Agricultural Commodities Produced, Australia, 2018-19. Canberrra.

Australian Government. (2020). Pest and Weed Management Programs Retrieved from https://www.agriculture.gov.au/ag-farm-food/drought/assistance/pest-management#round-2--successful-councils

Australian Meat Industry Council (2005)

Bortolussi, G., et al. (2005). "The northern Australian beef industry, a snapshot. 3. Annual liveweight gains from pasture based systems." Australian Journal of Experimental Agriculture **45**(9): 1093-1108.

Boyazoglu, J., Hatziminaoglou, I., Morand-Fehr, P., (2005) The role of the goat in society: Past, present and perspectives for the future, Small Ruminant Research.

Meat and Livestock Australia. (2020). *Market Snap Shot beef and Sheepmeat*

Nogueira, D. M., Gardiner, C. P., Gummow, B., Cavalieri, J., Fitzpatrick, L. A., & Parker, A. J. (2016). A survey of the meat goat industry in Queensland and New South Wales. 1. General property information, goat and pasture management. Animal Production Science, 56(9), 1520-1532. doi:https://doi.org/10.1071/AN14793

Star, M., Rolfe, J., De Valck, J. and Rajapaksa, D., Lyons, B. 2021. Report provided to the (2021). *Consumer demands – opportunities for lamb in Queensland*.

Toursism Australia. Toursim and Events Queensland. (2021). *Domestic Tourism Snapshot*.

Vaus., D. A. D. (2002). Surveys in Social Research (5th ed.). Crows Nest, NSW Allen & Urwin.