

Maintaining our share of the lamb meat pie



A report for

By Kelly Manton-Pearce
2012 Nuffield Scholar

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Executive Summary

This report outlines the future drivers of demand for Australian lamb and sheep meat in emerging and current markets and ways Australian lamb and sheep meat producers can better capitalise on growing opportunities in emerging markets and also amongst a consumer base demanding a differentiated high quality product. The Australian lamb industry needs to continue to develop a strategic business approach or we may miss opportunities to retain our long-term profitability and even market share. Following are specific industry recommendations:

- Emerging markets in developing countries- China, India and Middle East represent significant export opportunities for Australian lamb and sheep meat. We need to utilise these markets as a way of value adding the entire carcass.
- Continued pressure on Australian Government to improve trade access to China and India by reducing the tariffs currently placed on Australian lamb and make us more competitive with New Zealand in these markets.
- Continued access to existing markets and boosting sales in the domestic market will require an ongoing effort to reposition lamb as a versatile, value for money, everyday, healthy alternative; or value-adding and offering processed lamb products. We need ongoing consumer focus to refine our lamb products to encourage more frequent purchases of lamb.
- To further capitalise on the growing demand we need better communication from those higher up the chain- from customers and processors to stock agents and producers. We need to know what the market is demanding in order to determine what, when and how much to produce. Ongoing access to information about prices, trends in the market, and quality standards is essential to improve efficiency both on farm and in the market place.

- We can improve our supply chain efficiency through better feedback mechanisms. As producers we should be encouraging processors to look for tools and technologies that give a more accurate assessment of carcase conformation so we can have access to better feedback and are able to improve our end product.
- More formal strategic marketing arrangements all along the supply chain will assist producers to meet specifications but to also engage with emerging markets. Specifically, we need greater association between farmers to market our products on a commercial level. Encouraging coordinated co-operation of producers through targeted producer groups is one way we may achieve this level of cooperation.
- Develop better payment systems to help sheep producers manage the risk of sheep production which will encourage a less seasonal production and therefore reduce the volatility of returns.

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Foreword

My husband Alan and I own and operate an 1800 hectare farm near Yealering 220km SE of Perth in the Western Australian (WA) 'Wheatbelt'. Our business incorporates a commercial and stud sheep meat enterprise and the broad acre production of wheat, barley, canola and export hay. I have also spent the last 15 years working as a researcher in the area of sheep meat production on meat science projects for Meat and Livestock Australia (MLA) and the Sheep CRC program through Murdoch University in Perth, Western Australia. My Nuffield project has allowed me to combine my interests in the sheep meat industry with my sheep meat focused business.

It is an exciting time to be an Australian sheep meat producer because we are so well positioned to be one of the key global players in the trade of lamb and mutton into the future. Export demand for Australian sheepmeat is steadily growing with over 50% of our production being exported in 2012 and over the medium to long term, there is support for increased meat demand as personal incomes rise in developing countries and with it the demand for meat products as I will discuss further in the report.

As a sheep producer, understanding the market specifications we need to meet into the future and what our priority production decisions should be going forward is important. I felt the key to improving my productivity both on farm and in the market place was to experience the lamb and sheep meat trade for myself. *For the first part of my Nuffield project, I chose to visit a number of our current and potential lamb and sheep meat markets and develop a thorough understanding of consumer expectations toward lamb in these markets, along with drivers of choice, augmented with insights of how producers can work effectively with processors, retailers and foodservice operators to supply desired lamb and sheepmeat products to consumers.* Simply knowing what the market is demanding in order to determine what, when and how to produce will go a long way to reducing the disparity between what we are producing with what is being demanded by those further up the supply chain- the processors, exporters, retailers and finally the customers. This undertaking forms the first part of my report and I will focus on markets in developing countries in Asia

as I believe these regions are the key to drive our export industry into the future. My desire is to see the Australian sheep industry proudly focusing on producing consistently high quality lamb that meets the demands of its target markets.

As a sheepmeat producer I have personally struggled with the nature and culture of the current supply chain not only here in WA but nationally. Doing a Nuffield scholarship has really given me the opportunity to better understand the strengths and weaknesses of the current system whilst examining alternative supply chain systems that may contribute to improved stability of returns.

The lamb and sheepmeat industry is certainly very focused on the current issues it faces but it must not lose sight of the future. *The second part of my Nuffield study focuses from the eyes of a sheep producer on how can we can address some of these challenges and move away from a supply chain that confines our lamb product to being a simple commodity to allow us to better capitalise on our opportunities in emerging markets and also amongst a consumer base demanding a differentiated product.* My aim was to meet with all levels along the lamb (and other meat) supply chains around the world – from sheep producers, processors, stakeholder groups, researchers, government and international traders and customers and get as much information as possible to better target our sheep enterprises into the future.

Acknowledgments

I would first like to thank my husband Alan and our family for supporting and encouraging me throughout the Nuffield journey, from the application through to report writing, you have been there the whole way. You have spent endless time with a red pen and travelled with me to countries that are perhaps not on anyone's wish list. What an adventure Nuffield has been for both Alan and I.

I made some wonderful lifelong friends in my Nuffield year group and I thank you all for your support and encouragement along the way. Special thanks to all the partners for the support you gave Alan whilst I was away.

To the many people who opened up both their homes and businesses to me during my travels around the world, the Nuffield experience would not be possible without this generosity of both your time and knowledge. There are simply too many people to name but many thanks to you all.

Finally, a huge thank you to Nuffield Australia, in particular, Jim Geltch for all his support and encouragement and to my sponsors, CBH and CSBP, who gave me the humbling opportunity to travel the world, studying leading agricultural practices and to meet incredible people and develop networks worldwide.

Abbreviations

MLA - Meat and Livestock Australia

NZ - New Zealand

UK - United Kingdom

US - United States of America

EU - European Union

DAFF - Department of Agriculture, Forestry and Fisheries

WA - Western Australia

FTA - Free trade agreement

LMY - Lean Meat Yield

ICA - Industry Collaborative Agreement Program

\$AUD – Australian Dollar

WTO- World trade organisation

Objectives

The key objectives of this Nuffield study scholarship are:

1. To gain insight into the current and developing markets for lamb and sheep meat to create positivity for the industry.
2. To understand future consumer perception and attitudes towards lamb in these markets along with drivers of choice, augmented with insights of how producers can work effectively with processors, retailers and foodservice operators to supply desired lamb and sheep meat products to consumers.
3. To investigate options for improving supply chain efficiency and market feedback to sheep producers to improve carcase compliance and the readiness for meeting identified market opportunities.

Chapter 1: Our future export markets for Australian Lamb and Sheep Meat

1.1 Introduction

The first aim of this Nuffield Scholarship was to gain insight into the established and developing international markets for lamb and sheep meat such as the Middle East, China, United States (US) and United Kingdom (UK) and European Union (EU) and an understanding of the cultural, trade and economic barriers that we will face to secure these markets into the future.

Lamb and mutton represent primary animal-sourced protein for regions of North Africa, the Middle East, India, and parts of Europe. The nations with the highest consumption of sheep meat are the Persian Gulf states and other Middle Eastern countries, India, China, New Zealand (NZ), Australia, Greece, France, Uruguay, the UK and Ireland (Boutonnet, 1999). These countries eat 3-18 kg of sheep meat per capita, per annum. This often reflects a past history of sheep production. In contrast, in the US less than 0.5 kg per head of lamb is consumed annually, but they eat 22 kg of pork and 29 kg of beef. NZ and Australia are the world's leaders in lamb exports and account for nearly 90% of global export quantity (Barker, 2013). Thus, declining inventories in these two countries has tightened meat supplies and led to higher prices. While countries such as China, India, Pakistan, Northern and Eastern African countries have increased their sheep inventories, substantial population growth has caused demand to continue to exceed domestic production.

What became very clear during a meeting with Albert Vernooij, Head of Animal Protein Analysis in the Food & Agri Research Division at Rabobank in Utrecht, The Netherlands, was the decree that lamb is a nonconforming agricultural commodity compared to other meats such as beef and chicken which are (increasingly becoming) staple food items. The demand for lamb is usually inelastic, meaning it is not overly sensitive to price and the consumption

patterns are strongly dependent on cultural factors. Each country or region has its specific demand as a result of traditional types of breeding and cooking habits. For example, the type of lamb suited to the Middle Eastern market is not convenient for the American market which demands a larger carcase. That means that exporting regions or countries have to tailor the products they supply to different markets to ensure they are supplying what is required, or to organise trading procedures in order to choose the proper product to the different markets. Because of the limited demand, sheep meat is the most expensive meat in all developed countries.

In percentage terms, lamb clearly appears to have greater opportunity for growth than any other red meat sector; particularly in terms of what could be achieved in the next decade. Discussions with Meat and Livestock Australia Marketing representatives and Rabobank certainly focused on demand for Australian lamb in overseas markets becoming stronger in recent years and expecting this to continue into the future, but exports have been limited by available supply, high prices and the high Australian Dollar (\$AUD). Leading into 2013-2014, tighter supply is expected to help firm prices over the coming year, but a more sustainable market recovery would need to be driven by improved consumer demand and ultimately a more buoyant global economy. This report will discuss our current and emerging markets, the opportunities, the trade barriers and highlight how Australian sheep producers can capitalise.

1.2 Lamb and Sheep meat opportunities in Asia- China, Middle East and India

As economic and living conditions change and improve across Asia, new opportunities are emerging for Australia's primary producers. By 2050, the Asia Pacific region will represent more than half of the world's population (Bhagwati *et al.*, 2013). Population growth of this magnitude presents enormous challenges in terms of infrastructure, services and food security. Demand for food in Asia is likely to double between 2007 and 2050, with China accounting for 43 per cent of increased demand, particularly for beef, wheat, dairy products, sheep meat and sugar (Liu *et al.*, 2007; Soccio, 2012). India will account for 13 per cent of growth, with increasing demand for wheat and dairy products (Bhagwati *et al.*, 2013; Kumar,

2013). One of the strongest population trends being observed in Asia Pacific is urbanisation, which will see key farming land in these countries being subsumed by cities, further reducing the extent to which they can grow their own food. It can also affect dietary preferences, with urban consumers increasingly seeking convenience (Liu *et al.*, 2007). Urban residents also tend to reflect another emerging trend in the region — growing affluence. Higher incomes mean consumers tend to reduce consumption of traditional staples such as rice in favour of meat, seafood and high quality vegetables (Kumar, 2013; Soccio, 2012).

This growing affluence increasingly allows consumers to consider other factors including cleanliness, quality and the origin of their food, rather than simply price and availability. A conversation with Tesco's staff in Beijing highlighted that Asian supermarkets now have quality assurance standards for fruit, vegetables and other products along with preferred supplier arrangements (Chen *et al.*, 2013). This increasing focus on quality, cleanliness and convenience is serving to create real opportunities for Australian food producers in the Asia region. This report will now focus on the different regions studied and the opportunities and constraints to the expansion of lamb markets in each region.

1.2.1 Mainland China and Hong Kong

Significant insight into the Chinese market was gained with the support of MLA representatives Joy Tang and (the late) Aaron Iori. In the company of fellow UK Nuffield Scholar Ed Green we had meetings with Austrade, Chinese Meat Association, Department of Agriculture, Forestry and Fisheries based at the Australian Embassy, Rabobank, various importers and chefs and the US Meat Export Federation. Together we also visited Hong Kong and met with industry people who import significant volumes of sheep meat (both legally and illegally via the 'Grey Channels') into China. On our global focus tour I was also able to explore sheep meat markets in Inner Mongolia where sheep meat is traditionally consumed.

China has the largest sheep population in the world with the majority of the population residing in the central and northern regions. In 2012, consumption of lamb and beef was roughly 10% of the average Chinese diet whereas pork is 65% and chicken 25% (Conforte *et*

al., 2013). Compare these figures with 2004 where sheep meat and beef represented 3% of all meat eaten, which demonstrates the rise in popularity of meats other than pork and chicken (Owen, 2011). Per capita consumption varies from 7kg per annum in northern provinces to 0.25 kg in Southern China. Furthermore, urban households consume 3.5 kg per year as opposed to a figure of 1.17kg consumed by rural households (Owen, 2011).

The reasons constraining lamb consumption in China are fascinating. Here lamb and sheep meat is a 'taboo' product and thought to promote warming of the body. Hence consumption is 'recommended' by Chinese doctors in winter and autumn only. The most common lamb meal is the hotpot- which is basically where strips of meat (primarily breast and flap cuts and trim) are dipped in pots of boiling water for ten seconds. The common preparation method for the hot pot involves rolling trim meat (breast and flap) into a cylindrical shape and then slicing very thin sections from the roll (Figure 1).

China has grown to become one of the world's largest markets for sheep meat – and demand is expected to continue rising over the next 10 years. Chinese sheep meat imports for the first eleven months of 2012-13 increased 91% on the corresponding period of 2011-12 with a 38% increase in lamb shipments (Uchida, 2013). Mutton exports also rose, surging 302% year-on-year. (Barker, 2013; Chow, 2012).

Figure 1. From top left clockwise: rolled hot pot meat containing trim, finely sliced hotpot meat, chilli (L) and garlic (R) flavoured hotpot and Kelly enjoying lamb hotpot in Beijing.



Source: Kelly Manton-Pearce

A major factor driving this consumption growth has been the continuing economic growth in China and rising incomes. As incomes increase, Chinese consumers are significantly increasing their spending on meat – including sheep meat (Fu *et al.*, 2012; Kearney, 2010; Soccio, 2012). This is due to both the perceived positive nutritional attributes of meat and the pure enjoyment of eating it. Simultaneously, Chinese production cannot make significant gains due to overgrazing in some regions leading to a rise in the need for more imports (Zheng, 2010). Finally, with a significant drop in global sheep prices during 2012, Chinese imports have boomed with the knowledge they can import increasingly larger volumes.

Australian exports to China are dominated by low value product: almost 99% of our manufacturing cuts like the breast and flap meat and shoulders - which has raised the price of this trim from 50c/kg to \$2.50/kg (Tang, J. Personal Communication, Nov 2012). China is

also a good market for Australian (and NZ) offal, co-products like fats, oils and casings and there is also a longstanding trade in hides and skins for further manufacturing.

Figure 2. Meat markets in Beijing and Hohot, China showing various offal and whole carcasses.



Source: Kelly Manton-Pearce

Maintaining this market is of utmost importance to Australian sheep meat producers as it gives an excellent return on this low value product. Gone are the days when our exports were of the whole carcass or fullsets. These days the focus is on carcass utilisation – cutting up the carcass and selling each cut into the market that offers the highest return for it. In this case- trim and shoulders to China for hotpot! Traders and importers in China outlined many opportunities to value add these low priced cuts of meat and byproducts.

A visit to Tesco in Beijing demonstrated the opportunity for value added sheep based products on the supermarket shelves from rolled up Australian hot pot meat to various offal (Figure 3). Supermarkets are becoming increasingly popular due to the increasing demand by the Chinese consumer for safe food (Liu *et al.*, 2013; Uchida, 2013). Wet markets are a traditional supplier of sheep meat and there is growing concern of the safety of food sold in this retail sector (Liu *et al.*, 2007).

For Chinese consumers, beef and sheep meat have also been less affordable than pork and poultry. Unlike pork, which is more often cooked at home, beef and sheep meat tend to be consumed when dining out (Tang, J. Personal Communication, Nov 2012). Given their high

price and niche position in Chinese cuisine, beef and sheep meat are generally considered a special occasion item. China has also seen rapid growth in Western-style restaurants and hotels in recent years, particularly fast-food chains and five-star hotels. The growth in such restaurants will boost sales at both ends of the meat market, from high-priced loin cuts for fine dining to processed beef for hamburger patties. However it was noted that the Chinese do not value the prime cuts like the loins and legs like we do. At mealtimes, there were no prime cuts of meat on offer. Essential to increasing our opportunities in China will be strategic marketing campaigns focusing at the high end market.

Figure 3. Hotpot rolls and various ovine offal on the supermarket shelf in Tesco's Beijing.



Source: Kelly Manton-Pearce

Throughout China there was very little understanding of the difference between lamb, mutton and goat meat. Consumers here do not like the cooking smell of lamb or sheep meat particularly. China has always been a large user of wool and as a result there is the perception that sheep meat is a byproduct of the wool industry. Education programs such as handing out samples in supermarkets are working well to promote the high quality of our lamb products (Tang, J. Personal Communication, Nov 2012). Debunking the 'myths' about sheep meat in China needs to address taste issues, ease of use and highlight the high nutritive value.

However, Australia will not have this market all to itself, with a range of suppliers in other countries already granted access to the Chinese market, or expected to gain or regain access in the short to medium-term. Throughout China it was evident to me how much we are competing in this market with NZ. Over the last two years NZ have been diverting product into the Middle East and China as demand from their traditional UK/EU market declined following the global financial crisis (Soccio, 2012). The author met with Grand Farm- the largest distributor and marketer of sheep meat in Northern China. Alliance Group- one of the three main sheep meat processors and marketing companies in NZ has had an alliance with Grand Farm for over 10 years and this coordination has certainly helped boost overall NZ sheep meat exports to China by 90% in the 2012-13 period compared to 2011-12 accounting for 55% of the imported sheep meat share into China (Uchida, 2013). The key benefit of this collaboration was the ability for NZ to value add the non-premium cuts. Discussions with Grand Farms and other exporters indicated that if nothing is done to market the non-premium cuts, there will be a significant drag on revenue as the markets are expanded. Furthermore in China, food safety and security are a priority. Strategies to ensure a stable and safe food supply are top on government agenda. Marketing options for strategic alliances are abundant.

It is not only the actions of competing suppliers which could impact Australian lamb sales to the Chinese market. Government policy in China also has the power to make or break opportunities for exporters – Australian or otherwise – through changes in market access conditions. Currently China has a tariff on Australian lamb which is 15% for a bone in product (Uchida, 2013). Compare this to the NZ lamb tariff into China which is under 6% due to a free trade agreement between NZ and China, which gives NZ producers a genuine advantage over Australia meat exporters (Crawford *et al.*, 2012). The tariff on NZ product will be removed in 2016 (Conforte *et al.*, 2013). With the reduction in tariffs and the growth in population, NZ has become an important supplier of protein to China. Despite the advantage for the NZ sheep producers competition is likely to be limited as they have very little ability to expand due to increasing competition for land from dairying and forestry.

The Australian government will be one of the most important players in helping support the country's position in the market, through the successful negotiation of a Free Trade Agreement (FTA) with China and the continued management of trade and market access issues that may arise in this complex market. Negotiations for a future FTA will be complicated primarily because China views Australian agriculture as a competitor (as we do in reverse) (Zhou *et al.*, 2005). We have a range of products to sell, unlike NZ which primarily exports dairy and sheep meat to China. Also, and very importantly, China has a significant local sheep meat industry. They have the largest flock size of any nation so there will be a degree of protectionism. We must also consider that a FTA with China could harm Australian agriculture; the social, labour, environment and financial policies of the Chinese may make it impossible for Australian agriculture to compete.

Figure 4. Street stalls in Xian, China showing various sheep meat products for sale



Source: Kelly Manton-Pearce

In concluding, there are great growth prospects and opportunities for sheep meat in China at both ends of the market. Provided we maintain the low value trim market we can also target premium cuts such as racks and loins for consumption at high end markets. Hong Kong also has booming opportunities. The Australian and British expatriate community in Hong Kong is quite substantial—in the order of 90,000 and 250,000 head respectively. They are from traditional sheep meat consuming countries and combined with high incomes represent an excellent marketing opportunity.

1.2.2 The Middle East and North Africa

In the Middle East, a number of importers and meat industry organisations were contacted. The highlight was attending Gulf Food- the world's largest food fair as part of the WA Trade delegation, visiting 70,000 head plus feedlots in Bahrain and Jordan housing Australian sheep, meeting live animal and boxed meat importers in the region and learning about all the hard work of MLA representatives in Bahrain, Peter and Sharon Dundon.

The Middle East is a meeting point of money and culture. With a number of growing economies in the region and population growth particularly of sub-continental expatriates, the demand for protein has driven the expansion in lamb exports. At present it is our largest export market and growth is rapidly increasing (Meat and Livestock Australia, 2013). It is a high volume market for Australian forequarter products and a growing food service and retail market for the higher value saddle cuts. In addition, the Middle East remains an important market in terms of utilising the whole lamb carcass, with all cuts, including offal, utilised throughout the region including racks for the top hotels and restaurants to the lower value stewing style cuts. Importantly, the Middle East region is forecast to become Australia's largest lamb and mutton export market in 2013 despite the decline in total live sheep exports to the region, due mainly to the voluntary suspension of exports to Bahrain (Anon, 2013b).

Visits to feedlots and processors in both Jordan and Bahrain gave an appreciation for how lamb is consumed in the Middle East region. Lamb is part of many traditional meals and an important component of religious occasions like the Haj and Ramadan. It was exciting to see the very strong and growing demand for live animals with a premium being paid for freshly killed meat. The demand is for fresh meat- literally two hours post slaughter which is cut up and slow cooked. They really like warm, freshly killed meat and associate it with freshness and wealth. MLA is undertaking education programs to highlight that chilled and frozen meat is still Halal and safe to eat. These programs are essential to increase demand into the future. Compared to 8 years ago, there was minimal chilled or frozen meat being sold into

the region whereas in March 2012, there was 50:50 sale of live vs. chilled whole and boxed cuts.

The increasing availability of sheep from other regions, particularly Eastern African countries and these non-Australian sheep may be able to fill the gap if live export were to ever fall away. Whilst we do compete with these countries, our sheep are preferred as we are known for having a strong reputation for supplying large, good yielding and consistent numbers of healthy, disease free sheep and also provide in-market support. This will remain our marketing advantage in this region.

Figure 5. Visiting Jordanian feedlot facilities (L) and Bahraini feedlot facilities both housing Australian sheep.



Source: Kelly Manton-Pearce

In April 2012, the author witnessed first hand the excellent welfare of Australian sheep in the arrival and feedlot facilities and came home feeling very positive that the Live Export industry will continue. The Middle East is a very important and viable market that is being threatened by a non-participant majority with no direct experience but a large emotional rhetoric. Clearly evident in this region was:

1. The size of the investment made by the export companies in the Middle East
2. That the sheep are very valuable and must be cared for so their business can continue
3. The amount of fantastic work the Australian industry funds and provides in the animal welfare space.

It was during this study in the Middle East that it was possible to see how government intervention and trade barriers were affecting our ability to maintain these export markets critical for our industry. During travels through the Middle East in March 2012, the federal government were still in the process of rolling out their new Export Supply Chain Assurance program (ESCAS) guidelines in these markets (Anon, 2013a). The ESCAS guidelines basically stipulate that Australian sheep must be fully traceable from when they leave Australia to point of slaughter and International animal welfare standards as a minimum must be adhered to at all stages.

Lengthy conversations with MLA staff in the Middle East highlighted that these new rules have the biggest impact during the Haj and Ramadan which are important religious occasions for all Muslims – and involve ritual slaughter in their family environment at home as part of the celebration. The new guidelines mean that Muslims can no longer buy Australian sheep from the feedlots and slaughter them outside an approved abattoir. They will be able to buy and slaughter sheep from other countries but the demand is still strong for Australian sheep. The Bahraini and Kuwaiti processors had planned for this and will allow customers (even outside of religious holiday times) to come and select a live animal in the slaughterhouse holding yards and see it slaughtered and take it straight home.

The changes since visiting the Middle East in 2012 have been staggering. Bahrain was previously considered a stable significant market for live sheep and boxed meat which now are not taking any product. Despite this change, all the exporters interviewed for this study emphasised the growing potential in countries like Iran, Iraq and Algeria, which are all traditional sheep meat consuming countries, in coming years for live and boxed meat sales. Their propensity to be able to pay is an issue but they are still potential markets. To secure trade in these markets, formal arrangements with these countries in terms of a government-to-government Memorandums of Understanding and health protocols are essential. The Department of Agriculture, Forestry and Fisheries (DAFF) also needs to approve feedlot and slaughter facilities before trade can begin. In addition, recent visits from the Saudi Arabian government to WA may see a resumption of this market for live sheep.

Figure 6. Viewing freshly killed Australian lambs in a butchers shop in Amman Meat market



Source: Kelly Manton-Pearce

Figure 7. Various offal in Middle Eastern meat markets (far left), Supermarket meat counter in a Jordanian supermarket (second from right), Jordanian fat tail lamb carcase (far right).



Source: Kelly Manton-Pearce

There is certainly a lot of potential in the Middle East and North African region. A range of carcass specifications is being demanded in the Middle East and this is an advantage for our industry. For example- in the Gulf countries where lamb is subsidised by the government (eg Kuwait, Qatar) the demand was and will continue to be for live sheep as big but as lean as possible. In these countries consumers buy and sell on weight; the carcass is broken down

and sold as smaller nondescript portions. The average whole carcase is worth \$200+ (which includes the transport to the Middle East). Other opportunities include expanding into food service and retail business in the gulf countries particularly the United Arab Emirates where there is a large hotel and tourism sector. MLA are focusing on this market in both the Middle East and Asia.

1.2.3 India

The Indian market could offer considerable opportunities for Australian meat exporters as a result of India's economic growth and development. This untapped market has only recently opened up market access for Australian lamb but it is an interesting example of how trade barriers have prohibited the expansion of sheep meat into export markets, which will be discussed further.

India has the second biggest population in the world of 1.2 billion and of the 30% (or 300 million) Indians who are not vegetarian they only eat sheep meat and goat meat (Fu *et al.*, 2012). Like China it has a growing middle class of around 170 million. India's strong economic growth is increasing consumers' incomes. It is estimated that by 2025, India will have 583 million people living on incomes of above US\$4,380 (around US\$23,530 after accounting for the purchasing power parity) (Bloom, 2011). Furthermore, around 65 percent of the population is under the age of 35, which means there will be more and more people who are capable of earning and also have rising disposable incomes (Bloom *et al.*, 2010). Rising incomes are also driving up demand for specialty and value-added food products (Fu *et al.*, 2012).

The typical Indian lifestyle is becoming more urbanised and Western. This is leading to higher consumption of processed, packaged, branded and value-added food and beverage products. Urban consumers are increasingly willing to pay for premium products. The younger population is accepting different food and drink products. There is increased demand for product variety, as well as products from different countries. The number of imported food products is increasing in retail stores. This trend is evident not only in organised retail sales, but also in the small family-owned stores which dominate the market.

Not unlike developed countries, Indians are also moving away from the traditional three meals per day schedule resulting in higher demand for convenient products and snacks. The most popular ready to eat products are those based on traditional Indian recipes (Figure 8). Overall food and beverage consumption is expected to grow at rates between 6–11 percent for the next few years (Kearney, 2010). The products and sectors that are expected to have the highest potential for growth are: processed food, ready-to-eat meals, canned foods and snacks (Fu et al. 2012).

Figure 8. Examples of processed/value added mutton products on Indian Supermarket shelves.



Source: Photo Courtesy of Meat and Livestock Australia

India is a very tough competitor. Their overall trading strategy is to reduce subsidies but maintain tariffs (Austrade, Personal Communication, March 2013). Interestingly India is a country that until October 2012 was inaccessible to Australian exporters due to phytosanitary trade barriers and high tariffs. The phytosanitary trade barriers have been lifted and we now have some market access to India with a 15% tariff still in place. India has a large domestic population of sheep and goats and practices a degree of protectionism. The phytosanitary trade barrier arose because India made a list of diseases (eg Avian flu, brucellosis) which restricts access into India despite the fact that these diseases are present

in India. The USA recently submitted a World Trade Organisation (WTO) dispute to challenge this phytosanitary barrier (Anon, 2013c). Their aim was to increase access for their poultry exports which are currently barred under this phytosanitary ban. The recent opening up of India for Australian meat is linked to this WTO dispute.

NZ are much further progressed than Australia in terms of trade with India (Dent, 2010; New Zealand Ministry of Foreign Affairs and Trade, 2013). Discussions with Austrade officials indicated that NZ are close to signing an FTA with India. Australia has just recently managed to 'convince' India to start negotiating a bilateral FTA. This will take years. On the flip side, Australia also has phytosanitary trade barriers in place which prohibit the entry of fruit and vegetables amongst other agricultural products. Discussions with trade representatives around the world highlighted that our phytosanitary rules are Australia's version of protectionism and a source of contention for countries like the US- despite the FTA between Australia and US.

It is still very early days for accessing India as a potential sheep meat market. Discussions with Australian exporters indicate to me that one particular Australian processor has been able to access the market for the last few years by sending product to Singapore and re-packaging it before sending on. This is only hearsay but apparently this exporter has brand identification already in India which is making it difficult for other processors to access the market. However, since the market opened in October 2012 last year only about 14 tonnes of sheep meat has been exported from Australia to India (Anon, 2013b). The majority of this trade has been aimed at high-end international hotels and restaurants as well as supermarkets. By targeting products into the high end market first and generating strategic marketing alliances, it is only time before lesser value product will be demanded.

In addition, the Indians have a taste preference for older sheep rather than lamb which also presents a value adding opportunity. A strong prospect as discussed and confirmed in conversations with Indian traders would be to direct our Merino hogget wethers into this market. This class of sheep are the traditional sheep that would have gone on a live export boat to the Middle East. Developing a WA slaughter market specific to the Indian market is a

potential avenue for a risk management strategy rather than having a total reliance on live exports.

1.3 Maintaining and improving access of Australian Sheep meat in our current/traditional markets- the Australian domestic market, the UK/EU and the USA markets

Australia remains the largest single market for Australian lamb, although the decline in production in recent years, coinciding with ongoing growth in overseas markets, has seen a decline in its relative importance. In the 2012-13 period, around 50% of our lamb product was consumed domestically compared to over 80% in 1995 (Barker, 2013). The Australian Bureau of Statistics official consumer price index (CPI) shows that retail lamb prices in Australia have doubled since 2000 whereas beef rose 52%, chicken 15% and seafood 15%. But despite these positive figures the production of other meats such as beef and chicken rose rapidly compared to lamb and mutton (ABS, 2012). The US remains a stable market and the EU, despite quota restrictions and poor economic conditions, is still taking our product (Barker, 2013).

What is consumer research in both Australia and the UK/EU/US markets telling us about lamb consumption in these markets (Barker, 2013; Chow, 2012; Martin, 2012; Polkinghorne *et al.*, 2010; Rowe, 2010)?

1. Lamb is not considered by the vast majority of consumers (including those regularly consuming lamb) to be an 'everyday' red meat; that they perceive is best suited to special occasions and out-of-home consumption.
2. Many consumers (including regular consumers of lamb) feel ill-equipped to prepare it successfully with ease at home or know ways to prepare it simply and in a variety of ways to expand its appeal to the wider household.
3. The largest consumers of lamb are over 35 years of age and middle income earners.
4. Over 80% of lamb is purchased through retail outlets (predominantly grocery retailers) in Australia (Barker, 2013) with similar trends in the UK/EU/US.

5. While slightly more lamb is consumed during the spring, lamb is not considered a seasonal product by the majority of consumers.
6. Of particular note is the high regard and value that consumers feel towards Australian lamb, even though it often retails for a higher price. MLA research has shown that consumers are willing to pay a premium for high quality, nutritional lamb.

This report, however, will focus on long-established markets in the US and UK/EU. Strategies to boost sales in the domestic market are also covered in chapter 2.

1.3.1 United Kingdom and European Union

This study gained a strong appreciation for the UK-EU market from key importers of Australian and NZ lamb, which included JB Swift, New Zealand Farmers and Zandbergen World's Finest Meat. Zandbergen is one of the largest meat importers on mainland Europe. New Zealand Farmers is a subsidiary or trading arm of the Alliance chain which is one of the 3 key sheep meat processors in NZ. They export roughly 33% of the lamb imported into the EU.

The UK/EU market, like Australia, is 'western' but also has a varied demand based on local cultural preferences. It is a mid-size market for Australian lamb, and in terms of unit value, traditionally one of the most profitable for producers and exporters – with leg, shank and boneless loin the higher value cuts, as well as large amounts of manufacturing lamb traded. In 2012, lamb exports to the EU declined 6%, due to deepening economic problems and a falling euro relative to the \$AUD and associated price declines relative to other markets (Barker, 2013).

While the EU remains a high value market for lamb, Australia remains restricted by the annual sheep meat (including lamb, mutton and goat meat) quota of 19,186 metric tonnes carcase weight. At present our opportunity to expand is limited unless we can change our quota. NZ have a 230,000 tonne quota and have been short-shipping on this for many years (70% used in 2012, down from 80% in 2011 and 86% in 2010), instead choosing to divert

product into China and the Middle East, which competes with our product (Soccio, 2012). The current financial position in the EU is making it difficult to shift more product there but it is still a high value market for Australian product. One of the major barriers that stand between us and greater access into the EU is the French Farmers Union. They are determined to keep our quota low as a form of protectionism for their sheep farmers as there is free trade between all countries in the EU.

Market forces shaping UK lamb consumption in recent years has seen a response to high retail prices in the last two years resulting in consumer resistance in favour of cheaper protein sources and a significant 25% decline in demand over the last 2 years (Richards, D. Personal Communication, March 2012). The flow-through is a decline in retail sales (80% of lamb in the UK is sold at retail) and also food service organisations (mainly pubs) not putting lamb on the menus causing a decline in lamb consumption and demand (Richards, D. Personal Communication, March 2012).

To understand the next phase in consumer demand involved meetings with product managers from UK retailers Sainsburys, Waitrose and Tesco. Arguably, UK food retail is the most sophisticated in the world. If you want to know what the next food retail trend is, chances are the UK retailers are working on it. In Australia now, many of the Coles and Woolworths upper tier staff are ex-UK supermarkets and we are starting to see many of their tactics coming into place, starting with the cut price lamb promotions now at Woolworths and previously Coles. In the UK it is common to sell lamb on promotion- 40% of lamb sales last year (Richards, D. Personal Communication, March 2012), so we can certainly learn from the UK experience. This loss leader strategy positively moves volumes and gets a larger proportion of the population putting lamb on the dinner plate, but it also places pressure on the image of lamb sold at full price. In addition, in the UK the sales drastically drop after the offer closes and the demand for lamb remains low for many weeks afterwards, which has negative impacts down the chain. Retailers will likely remain fiercely competitive in the current climate and want to maintain robust promotional plans.

In supermarket tours with the product managers, the growing availability of value added lamb products on their supermarket shelves was evident (Figure 9). Coles and Woolworths in Australia are also starting to develop value added lamb products but not to the same level as that witnessed in the UK. The product managers were focused on product development that encouraged consumption of lamb at home because they believed it will be the most effective way to increase lamb sales. They saw a large market for the pre-marinated and pre-made lamb products or products requiring minimal preparation. They were also focused on developing packaging technologies such as vacuum packing to provide flexibility and prolonging shelf-life which was seen as a key strategy to gain more market access. An alternative way of thinking about developing value-added products by retailers is that they are not just satisfying the never-ending consumer demand for new and innovative products that offer a pleasurable eating experience, they are also a way retailers can differentiate to gain market share.

From the UK supermarkets the author learnt about the current marketing approaches targeting the younger generation and promote lamb as 'ideal anytime'. Lamb in the UK has always had the perception of being eaten predominantly Sunday lunchtime as a roast. I think more research and support for consumer awareness- not just domestically but in export markets that lamb is not only for roasting will increase younger consumer usage and their midweek meal options. Countering this perception requires long-term concerted promotional efforts that encompass both industry-level generic promotions and targeted marketing by individual processors and retailers. To reposition lamb as a versatile, value for money, everyday alternative to chicken will encourage increased consumption of lesser known/non-premium cuts or by improving the merchandising and in-store promotion of lamb.

Figure 9. Examples of valued added products on Tesco's and Sainsbury's shelves in the UK.



Source: Kelly Manton-Pearce

So how can Australian farmers improve access and sales into this market? Firstly, there is feedback from numerous traders that the Australian product lacks consistency, unlike the NZ product. Our carcasses, particularly those coming from the Eastern States are too big resulting in large cuts not desired by consumers. This market specifically wants cuts from 18-22kg carcasses, hence, processors need to better target the products they send to this market and offer price incentives for producers to aim for these specifications.

Discussions with the Australian Agriculture Trade Ambassador to the EU in Brussels on opportunities to improve the quota into the UK were disappointing. The general consensus was that we need to campaign for change to the current system for quota from a 12 month to a 6 month quota system. If NZ do not use all their quota, then quota parcel for sheep meat goes into a 'communal pot' that anyone can service. In the meantime, the feedback was that we are better off focusing on continuing to send the high value cuts into this market especially as economic conditions remain relatively poor and the euro weak. Also pointed out was that strong relationship between the EU and NZ suppliers means that any improvements in trade to this market would result in increases in NZ trade, rather than Australian.

There is opportunity to work with NZ in this market. NZ being a seasonal producer supplies the UK with lamb typically from January-June after which the UK has sufficient domestic supply. There is a lull in UK and NZ production during November and December which coincides with the peak production time for Australia producers. Successful exporter-importer collaboration has been established between New Zealand Farmers-Alliance Group and WAMMCo (a Western Australian Processor) to supply the British retailers with 12 month supply of consistent high quality lamb. For Western Australian producers in particular, the opportunity to develop a coordinated marketing and sales approach appeared to be a win-win. This streamlined supply arrangement has essentially established a closed loop by producing lamb for a specific market and encourages the extensive sharing of information to reduce transaction costs, increase margins and achieve greater consistency in the UK market demanding quality and supply.

To conclude, NZ have long been exporting to UK/EU market and as a result the British have a natural association with NZ lamb. To quote David Richards from New Zealand Farmers: *'if you were to ask any random person on a British street what are the first three words that come to mind when you ask them about NZ- you are guaranteed one of those words will be lamb (another is probably rugby).'* British and European consumers have little affinity with Australia as being a sheep producing country and we need ongoing strong marketing of Australian lamb to raise our profile as a quality meat producing country but need to balance this with whether it is more worthwhile pursuing this market or focusing on other emerging markets.

1.3.2 United States of America

The US market remains extremely lucrative with significant export returns. This is despite the average American eating only 0.5kg/h/pa of sheep meat compared to 36kg/h/pa of beef. The US remains Australia's largest single lamb export market with exports forecast to lift 4% in 2013 (Hoang, 2013).

The major demand is for leg and rack shipments but the Hispanic, Jewish and Muslim population are driving the demand for cheaper cuts such as shanks and whole carcasses.

Consumers in the US rarely eat mutton, and favour the more expensive cuts of lamb, mostly lamb chops and leg of lamb. Lamb consumption in the US, while becoming more widely recognised in foodservice, is still seen largely as a niche product when compared to beef, pork and poultry (both chicken and turkey) (Hoang, 2013). As such, existing consumers will make up the vast majority of the market, with incremental gains in awareness among newer markets. These existing customers, mainly located on the west and east coasts, are less sensitive about price due to strong income or ethnic preference.

In California the author had meetings with two of the states largest lamb producers (Superior Farms and Richard and Stacey Hamilton of McCormacks Sheep and Grain) who supply lamb all over the US and are members of the American Lamb Board. They explained that domestically produced lamb is very different to Australian and NZ lamb. Most of the domestic product is grain-fed and much larger at slaughter with more marbling whereas Australian and NZ lamb is primarily grass-fed resulting in smaller animals with a different flavour profile. They also have a different definition of lamb for domestic product which allows their animals to be up to 18 months old and still meet the lamb category. The obsession with getting lambs up to very high carcass weights (40kg is not unusual) is very inefficient and partly explains why their industry is in severe decline. They felt their major challenge (besides stopping coyotes eating their sheep) was the fear of the unknown when it comes to lamb in the US. Nearly 40% of Americans have never eaten lamb. To quote Richard Hamilton: 'People are not quite sure what to do with it. People seem to think it's a specialised product, like wild game.' (R. Hamilton, Personal communication, June 2012). One initiative of the Australian industry is to work with the US industry (and NZ) through the Tri-Lamb forum. The common goal of the three countries is to get more lamb on menus and supermarket shelves and thus increase consumption.

The US lamb industry has evolved from producing and marketing lamb as a commodity to meeting niche market demands especially as numbers decline. Given that lamb consumers are particularly concerned with quality, the industry is working on genetics, and a variety of alliances to improve product consistency and quality. An example of an alliance is between MLA and Superior Farms to produce and develop Lamb Burgers. Americans love their

burgers and introducing them to lamb via such a familiar vehicle is a good way to get them to start thinking about lamb. In discussions with MLA's North America regional manager, Stephen Edwards, MLA has been pushing this concept for the last few years and is seeing interest now that the economy is picking up. Australian lamb burgers and sliders offer the perfect opportunity to drive this type of incremental traffic and sales, attracting a young crowd of food connoisseurs. Even a small increase in the consumption of lamb in the US, given its large population will see an improvement in sales to the US. The key to improving sales to this market involves ongoing marketing campaigns with products such as the lamb burger and further development of lamb products that can substitute for typical beef products. On a negative note, Superior Meats is both the biggest importer of Australian lamb into the US and also the biggest processor of US lamb. The MLA driven initiative has caused some consternation in the US as it is thought that Superior Meats are disadvantaging the local industry in favour of imported product. Another Australian example of a successful collaboration is in North America- The Lamb Company, owned by a consortium of Australian and NZ meat companies. It is sending large volumes to the US and Canada with great success.

Chapter 2: How do sheep producers capitalise on opportunities in emerging and developed markets?

2.1 Introduction

Chapter 1 has demonstrated that the lamb and sheep meat sector in Australia is undergoing rapid change as demonstrated by significant growth, diversification opportunities and potential returns in a number of new potential and existing lamb and sheep meat markets. In this rapidly evolving business environment, advanced supply chain systems have been observed to have dramatic impact on future competitiveness and ability to meet market demand (Finch, 2006; Jie, 2012). Hence, such systems have the potential to provide significant contributions to the Australian lamb and sheep meat industry performance.

2.1.1 Lamb production and lamb supply chains

Before discussing the advancement of lamb and sheep meat supply chains it is important to consider the current lamb and sheep meat supply chain structure. The Australian lamb and sheep meat supply chain can be segmented into four general categories: lamb and sheep producers, processing, retailing/wholesaling and the final consumer (Spencer *et al.*, 2012). Starting with the producers, figures suggest that across the sheep industry, less than 40 percent of producers derive more than 20 percent of their income from the production of prime lambs (Martin, 2012). So production decisions have not, in the past, been driven by returns from lamb alone for the bulk of the industry. The specialist lamb production sector is increasing in size, especially in recent times with the higher returns and scope for increased growth from export markets (Spencer *et al.*, 2012). However, a high proportion of prime lamb production in Australia is based on opportunistic behaviour, where the predominant activity of the producer is an alternate farming enterprise such as cropping. The production of lambs is therefore dependent upon returns from alternate uses of land and available feed.

On this basis, farmers are certainly challenged to produce a consistent and high quality product under the constraints of seasonality and feed risk and limited long term supply contracts.

There are several channels that the product can move from producer to consumer: finished on farm and then sold directly to the processor or through several intermediaries such as the finisher, independent livestock agents and a different company or companies to export it. Some see the use of a third party stock agent as contentious as it causes a separation between producer and processor, causing a break in the flow of information down the supply chain and limiting the commitment of producers to one processor. In addition, the Australian lamb and sheep meat supply chain has been dominated by the auction systems and the spot markets with a very limited use of formal contracts. Supply chain transactions are conducted without prior commitments placed on producers, and with little control over the commodities by buyers (Nasir Uddin *et al.*, 2011). Market transactions, where operations are production pushed and are often adversarial, whereby producers do not gain any insight of their customers and are isolated from the rest of the food chain (O’Keeffe, 1998). Likewise, processors lack innovative initiatives to develop the buyer-seller relationship with the producers while a low trust environment between the two often exists (Gooch, 2013; O’Keeffe, 1998). This study promotes that the underlying relationships and knowledge flow among the participants needs to improve for the benefit of the whole of supply chain and the ability of the Australian lamb and sheep industry meet future demands (Jackson *et al.*, 2007; Jie, 2011).

Therefore, based on the above and that from Chapter 1, the Australian lamb supply chain is constrained by two key factors: one being that the majority of product is being distributed to a variety of different markets with different product requirements with further differentiation expected into the future; the other being that production is seasonal and dependant on weather. These factors result in conflicting objectives, whereby meat processing companies try to meet the needs to many different markets while producers attempt to optimise their farming systems based on personal, climatic and production

challenges. The differences in drivers for producers and processors creates distrust, a lack of alignment and commitment amongst participants (MacLeod, 2011).

2.1.2 Increasing competitiveness and ability to meet market demand for the Australian lamb and sheep meat industry

The challenge for the Australian sheep meat industry to remain competitive and to respond to the changing market environment can be separated into four key components:

Firstly, there is a lack of clarity by the Australian lamb and sheep meat industry on how best to achieve more integrated supply chain transactions between producers and processors/retailers. Closer collaboration between sheep producers and processors should be seen as necessary to increase the competitiveness of the sheep meat supply chain, through increased trust and commitment, long term relationships and contracts (MacLeod, 2011; McDermott *et al.*, 1998). However, the seasonal and uncertain nature of lamb production and the myopic tendencies of producers and processors are seen to foster adversarial relationships between these two parties. A lack of trust is thought to exist between many producers and processors and may prohibit a long-term industry strategy from being developed. In this respect historical grievances may be limiting the ability of some participants to move forward. These issues need to be addressed and rectified to enable closer collaboration and success in the future.

Secondly, there is a lack of understanding within the industry about what drives Australian producers selling decisions and behaviour. Currently producers are seen to be carrying out different selling behaviours and there is a desire within parts of the industry to alter or move away from certain selling practices. This is for the ostensible goal of benefiting the entire sheep meat industry through increased supply chain efficiencies and value chain performance.

Thirdly, efficient and aligned procurement through contracts is touted to lead to reduced price volatility, increased trust, less power abuse, better plant utilisation and better product

marketing (Kunkel *et al.*, 2009). However in Australia, forward contracts always seem to have a winner and a loser which has effectively made them a failure as a risk-management tool for industry (K. Joseph, Personal communication, June 2013; Tomek & Peterson, 2001). Will more intelligent longer-term supply contracts allow for a greater certainty of supply for processors and the provision of more complex incentives in terms of product attributes?

Finally and perhaps most importantly, whilst decreasing costs and increasing efficiencies and production have been the drivers of industry competitiveness in the past, there is now a need to create more value in the end product by responding to consumer trends and behaviour. The relationship between producers and processors can have a role to play here, as some consumers desire an increased connection with the production and properties of their food.

Therefore the overall question this chapter aims to address- how does an opportunistic, fragmented, poorly aligned industry improve its supply chain to capitalise on long-term growth opportunities in emerging markets and also amongst a consumer base demanding a differentiated product?

2.2 Facilitating proactive strategic supplier-marketing relationships into the future: establishing trust and quality information sharing between partners

A strategic partnership is 'a co-operative and collaborative way in which buying and supplying firms interact to achieve mutually beneficial outcomes, these relationships position the participants to be more competitive in the marketplace' (Blancero *et al.*, 1997).

A key message this study aims to deliver is that the Australian sheep industry desperately needs to continue to develop schemes that provide open communication, processing and marketing information along with an ability and encouragement to act upon that information that would allow us to understand the needs of our consumers (Morris *et al.*, 2000) and produce lamb as efficiently as possible. The economic benefits that could be derived from encouraging greater coordination across the Australian lamb industry appear

unlimited. From the retailer/processors perspective, being able to attract and retain a greater share of the producers business will have significant positive benefits on the profitability of their enterprise and, in turn, their propensity to attract and retain retail customers (Batt, 2003; Zanquetto-Filho *et al.*, 2003). From the producer's perspective, a strong alliance is expected to reduce much of the risk and uncertainty currently present in their production systems (Zanquetto-Filho *et al.*, 2003). Industry benefits overall from the decreased need to dispose of lamb on markets that may not be suited to specific lamb cuts or quality, fewer dissatisfied customers and consumers, and an overall increase in the perceived quality of Australian produced lamb. However, in an environment where distrust and disputation is common between the partners along the supply chain, this study sought to investigate the various ways in which those at the top of the supply chain- such as the retailers and processors could build stronger relationships with sheep producers.

The likelihood of developing strong strategic alliances has been shown to be highly dependent on establishing trust between partners in the supply chain specifically between farmers and processors, a relationship that is desperately needed by both parties in Australia (Le Heron *et al.*, 2001). A clear issue with the current lamb supply chain has been the poor communication and mistrust across the industry partners resulting in minimal collaboration. Developing mutual trust can stimulate increased cooperation and encourage supply chain partners (Peppers *et al.*, 2004) to work towards maintaining the relationship and to oppose the temptation to take short term gains and further exacerbate the poor relationships in the Australian lamb supply chain. However achieving a trusting relationship requires a deliberate strategy of developing a shared vision and accumulated evidence of good feedback (Batt, 2003; Jie, 2012).

2.2.1 Shared values

The extent to which trading partners in a relationship share beliefs and values, such as vision or goals, will influence the ability to build mutual trust.

The common theme identified in this study was that both parties must agree that their goals, although not necessarily similar, are compatible, so that each party can achieve their own objectives as well as the objectives on which the relationship has been built. If both partners do not share similar values, they are less likely to benefit from the relationship and motivated to maintain the relationship (Batt, 2003; Jie, 2012).

The basis for a shared vision in the future for the Australian lamb industry must be the need to align production practices with the evolving needs and behaviours of consumers. Chapter 1 has highlighted that lamb is gaining a reputation as being expensive meat and not considered an everyday purchase (Pethick *et al.*, 2011). Consumers are becoming ever more interested in the quality of their food and if lamb continues to remain high in price it is essential that quality is maintained. Furthermore, an important challenge for sheep producers into the future will be the moderation of demand by socio-economic factors such as human health concerns and interest in animal welfare. By the entire supply chain working together to produce an ethical and high quality lamb product, successful livestock partnerships will endure and become an essential component to the long term viability of the Australian lambs and sheep meat industry. Australia is leading the world in lamb eating quality assurance with the implementation of the Meat Standards Australia (MSA) sheep meat eating quality program (Polkinghorne *et al.*, 2010). However, MSA is not just an eating quality assurance program, it also outlines scientifically justified guidelines for on farm animal welfare and meat processing to ensure optimal eating quality. So far there has been limited industry uptake of MSA by sheep processors and producers (Pethick *et al.*, 2011).

2.2.2 Quality communication and contact is needed to build trust

The information-sharing paradigm which forms the basis of this study is that achieving a high degree of cooperative behaviour for the lamb and sheep meat industry requires supply chain participants voluntarily share operating information. Information sharing can bring together partners along the supply chain and allow them to work towards achieving decision consensus with shared goals and mission and lead to a competitive advantage and improve performance and profits. In particular, those at the top of the supply chain need to have an

open, frequent and formal communication strategy. However this communication needs to be personalised, frequent and high quality in terms of being accurate, valuable and relevant, timely, up-to-date and reliable. Farmers interviewed as part of this study wished to have confidence in their understanding of future market directions and the position of the companies they were supplying in relation to the anticipated markets. Those farmers in contractual relationships were demanding up-to-date information about the company position on supply specifications and often said they would continue to farm to specifications in exchange for reliable price information and proof of loyalty to farmers from the processors.

A specific illustration of the importance of quality feedback and information in the case of the Australian lamb and sheep meat industry, is the current system of feedback of carcase information impacting negatively on producers' ability to meet market specifications which causes a degree of mistrust of processors. Recent MLA findings suggest that 30-65% of Australian lambs are not meeting market specifications (Ball, 2013). Currently most Australian plants pay on a carcase weight and manual palpation fat score which are believed to be reflective of carcase conformation and lean meat yield and this is incorporated in the payment grid (Pethick *et al.*, 2011). Recent research from the Sheep CRC has indicated that manual palpitation is not repeatable within scorer but also poorly reflective of lean meat yield (Gardner, G. Personal Communication, June 2013). The use of fat score in Australia does not provide as accurate a correlation to the yield or saleable value of the carcase. This limits not only the accuracy of different payments to growers, but also the value realized from each carcase during processing. Processors need to look for tools and technologies so that lamb carcasses can be graded using consistent and accurate technology to give the best feedback to producers. Appendix 1 discusses how other countries are grading lamb and some of the latest technologies being tested by industry.

2.2.3 Producer groups- to develop trust and open communication

Producer groups, such as those outlined in Appendix 2, are an excellent structure on which to develop trust between supply chain partners and open communication and feedback to the producers allowing them to continually adjust according to market requirements.

This author spent time in the UK with British sheep producers, meat processors and retailers to study their lamb and sheep meat supply chains. An important feature of the UK lamb and sheep meat industry in the last 10 years has been the emergence of partnerships between producers, meat processors and supermarkets (Owen, 2011; Young *et al.*, 2002). In recent years, these partnerships have extended further up the supply chain and the feedback from these alliances is that despite the fact they have been difficult to establish and slow to develop, the momentum behind them is gathering and they currently account for approximately one-third of lamb production in the UK and this figure is expected to grow (D. Hughes, Personal Communication, March 2012). There was a growing acceptance amongst UK sheep producers that partnership arrangements are the only sustainable form of trading relationship in the long term.

The driving force is very different between the three producer groups outlined in Appendix 2 but they all facilitate open communication and excellent feedback to the producers allowing their groups to continually adjust according to market requirements. Feedback from the producers involved in the three producer groups studied was positive about their relationship with the retailers and highlighted that, by providing bespoke services and promoting attributes around their product, they were able to establish more than just a price relationship with the end user, the retailer (J. Morgan, Personal Communication, July 2012). The processor and retailers also benefit from involvement with the producer groups because they have a guaranteed supply with more product meeting their market specifications (A. Jones, Personal Communication, July 2012). Hence a shared vision has led to successful partnerships, trust and excellent information and feedback being delivered.

Readers of this report are encouraged to read about the Livestock Marketing-Dalehead Foods-Waitrose Producer Group in particular (Appendix 2). This group regularly interact with UK supermarket Waitrose at field days and have access to privileged information on sales and marketing that a retailer would historically not have provided. At the end of each season, each farmer in the group gets a comprehensive, individualised report on how their lambs performed, in terms of quality and financial breakdown against a group benchmark. Feedback on benefits from producer group members indicated that the information back to the producers does not just enable them to produce highly consistent lamb; it also allows them to make informed decisions about their enterprises. They are able to improve efficiencies and increase revenue in ways that producers outside of this scheme would not be able to do. The Waitrose lamb specifications are no different to the other retailers but the producers in the Livestock Marketing-Dalehead Foods-Waitrose Producer Group met market specifications on average 93% compared to the industry average in the UK of 56% (Morgan, J. Personal communication, July 2012).

There have been a number of producer groups linked mostly to processors in Australia over the last 20 years but most have not succeeded. Reasons for this could be due to not enough reward from processors or retailers, Australian sheep producers lacking a collaborative mentality, greed and the breakdown of trust between partners (K. Joseph, Personal Communication, June 2013; Morris & Young, 2000). The presence of a dedicated independent third party coordinator is also a possible reason why the UK Livestock Marketing-Dalehead Foods-Waitrose Producer Group model works well (Morgan, J. Personal communication, July 2012). Despite the poor performance of the producer group model in Australia this report doesn't dismiss the relevance and future importance of producer groups for our industry, but instead supports the benefits of collaboration between producers and those further up the chain into the future. Any buyer-seller relationship such as a producer group should be regarded by industry as an investment.

2.3 Understanding sheep producers marketing preferences to better foster industry collaboration

Extensive literature searches have failed to identify any reference by the Australian lamb and sheep meat industry to the different marketing strategies of Australian producers and the likelihood of each grouping to associate with those higher up the supply chain in a formal or informal alliance. Producers differ in their choice of whether to commit to one company or not and also in their desire for active or passive involvement in selling decisions.

This study has characterised (Figure 10), through discussions with UK and NZ Industry representatives and industry papers, the different marketing strategies of sheep producers (Bensemann *et al.*, 2011.; Forsyth *et al.*, 2009; Le Heron *et al.*, 2001; MacLeod, 2011; McDermott *et al.*, 1998; Parsons, 2009; Saunders *et al.*, 2011).

Procurement programs could be designed to vary in the level of commitment necessary, which would relate to the level of risk and reward. In general, marketing strategies differ in the level of commitment, but also by the level of risk and related reward that goes with it. Segmentation of procurement plans may provide producers with options that better suit their strategic orientation and values, which would assist in influencing producers' behaviour more effectively (Bensemann *et al.*, 2011; Fearne, 1998; Saunders *et al.*, 2011; Zanquetto-Filho *et al.*, 2003). Producers that take on higher risk must have opportunity to have extra reward. This will be a fundamental mind-shift for some in the industry through registering and accepting that not all producers deserve to be paid identical prices regardless of the level of risk and commitment undertaken.

Marketing strategy and trust are not, however, the only drivers to maintain a supply chain relationship (Anderson and Narus, 1990; Gundlach *et al.*, 1995). Producers interviewed in this study have also indicated that the major reason for continuing to trade or establishing a relationship with their preferred producer/retailer is (unsurprisingly) the expectation of high returns. Since satisfaction with the relationship is derived primarily from the extent to which the producers expectations are fulfilled (Batt, 2003), satisfaction is also posited to have a

direct influence on the producers desire to maintain their relationship with their most preferred buyer/agent. Whether it is trust or simply the producers' satisfaction with the exchange that is the predominant force impacting on the producers' desire to maintain their relationship with their preferred seller warrants further investigation. Since producers can readily switch selling methods, there is the danger that while processors/retailers may invest in building long-term relationships producers will continue to pursue a more transactional approach to the marketing of their lamb and sheep meat.

Figure 10. Marketing strategies of Australian lamb and sheep meat producers

		<i>Commitment level</i>	
		<i>Committer</i>	<i>Non committal</i>
<i>Selling Behavior</i>	<i>Active</i>	<p><u>ALIGNED PRODUCERS</u></p> <ul style="list-style-type: none"> • High level commitment to fixed price contracts and or more stringent delivery specification contracts, and have an active involvement in selling decisions. These producers had the lowest propensity to switch companies once they had committed at any price level. • They are willing and able to meet tighter specifications in terms of price and delivery and will make changes to production activities that are tied in to marketing decisions. Are influenced by the provision of targets and rewards for meeting targets and any potential area for closer collaboration. • Willing to lose some selling control to be part of the bigger picture of delivering the required product to the market. They are most interested in what is going on in the consumer market. • Place higher value on the services processors provide such as market information, producer groups and use the information available to make their own decisions. • Value a high level relationship with a processor/retailer, and the drivers of this relationship are different than those producers who have dependent relationship with their buyer. There is potential to bind these producers in closer to the company by rewarding them for meeting more stringent delivery specifications, provision of more in-depth information above what regular suppliers get, and an increased level of services. 	<p><u>ACTIVE TRADERS</u></p> <ul style="list-style-type: none"> • Aims to maximise returns by optimising their buying and selling according to market conditions. They place the most value on achieving the highest price, and are willing to trade this off against convenience, security and service. • They desire flexibility and full control in sales channels • The desire to retain control means these producers require the highest financial incentive to commit, and the preference for trading means these producers are most likely to switch companies for smaller financial incentives. They have little connection to one company
	<i>Passive</i>	<p><u>MINIMAL ALIGNMENT</u></p> <ul style="list-style-type: none"> • Are characterised by their low level of buy in to a committed channel but commit to decrease price uncertainty or secure processing space. • More likely to commit for low or zero financial incentive, due to the non-pecuniary benefits commitment provides. Trusting relationships are important particularly with the buyer. • The commitment for price certainty generally follows a poor season or volatile or low prices. • Have a preference for autonomy and lack of market focus prohibits greater integration. 	<p><u>PASSIVE SELLERS</u></p> <ul style="list-style-type: none"> • Passive with in their selling decisions and prefer another party to take care of selling arrangements for them such as a third party agent. Strong preference for convenience and lower concern for trading and little desire to change. • The requirement to commit would increase the burden of selling decisions and potentially impact on their production activities

2.4. Alternative forward contract arrangements

This study investigated supply contract options offered to UK and NZ farmers, as they have a number of different selling options for their lambs. The overall conclusion was that many of these farmers saw contracts as the way of the future for several common reasons. For example, quality levels often demanded by contracts are increasingly becoming a prerequisite for global market access. Contracts are a way to guarantee killing space at the meat works and contract defined goals that could be worked towards. Those farmers working to contracts highlighted that they had to understand their production systems better as well as seeking earlier market indicators from the processor. Supplying to precise specifications usually requires additional monitoring skills (over and above other supply arrangements). Farmers were very receptive to funding arrangements that would lead ultimately to timely accessing of information, developing strategic innovations to enable contracts to flourish, exploring with the company how to satisfy a customer, looking at risk management using minimum price assumptions to plan input scenarios and developing relationships with management to foster trust around the contract.

Following are a few examples of payment systems being developed and utilised in the UK and NZ that have some merits and applicability for the Australian Sheep Industry:

2.4.1 Cost of production contracts

The use of cost of production contracts previously the domain of dairy and pork producers are being used by some UK sheep farmers (A. Jones and D. Hughes, Personal Communication, July 2012). This system is a perfect example of vertical integration being achieved through controlling and leveraging the flow of information ensuring that the retailers are not only generating information on their consumers but also their suppliers. To understand the nature of these contracts requires some explanation of the latest trend in the UK by the retailers to employ 'Agricultural Managers'. The role of Agricultural Managers of three of the major supermarket chains interviewed during this study appears to be to build relationships with producers by developing a producer group and offer a price premium to members of the group. Prices are calculated as cost of production plus model (Martin, 1997). The Agricultural Manager assists the producers to determine their costs of

production. This information is useful from a benchmarking perspective and the retailer is generating huge amounts of information about its suppliers. Is the retailer using this information to develop long term relationships or using the data as a means to know how far they can push the farmers but still keep them in business (Moeller, 2003)? Further benefits for retailers to pursue this line of pricing are control of traceability, food safety and security targets into the future.

There are several potential advantages for producers who may consider a cost of production contract. Such contracts may provide for a more stable income for the producer by reducing traditional marketing risks (Kunkel *et al.*, 2009). Such contracts may allow a producer to benefit from technical advice, managerial expertise and access to technological advances provided by the retailer.

In the UK the Agricultural Managers regularly run very informative field days for their producer group members (A. Jones, Personal Communication, July 2012). An agricultural production contract may provide the producer with a guaranteed market, provided that the commodities are produced in accordance with the contract. However, by entering into a production contract which establishes a formula for compensation, the producer may lose the potential for increased profits arising from improved market conditions. In addition, since such contracts are often very specific in their requirements and in limiting the producer's interest in the commodities produced, the producer may become a mere provider of a product for a few consumers, with very little ability to value add or expand their business (Kunkel *et al.*, 2009; Moeller, 2003).

2.4.2 More flexible forward supply contracts

Many producers in the UK will commit to sell a given number of lambs to a retailer per year linked up with an agent (employed by a processor) who supplies a particular retailer. They are not locked in for particular days or at a particular price but must supply that number of lambs when they choose to deliver within a three month period. The processor has a known supply and the agent works with the farmer to nominate kill dates. These producers do have the option to also lock in prices and dates as part of a less flexible forward supply contract.

The flexibility of these contracts differs greatly to those offered by many Australian meat processors.

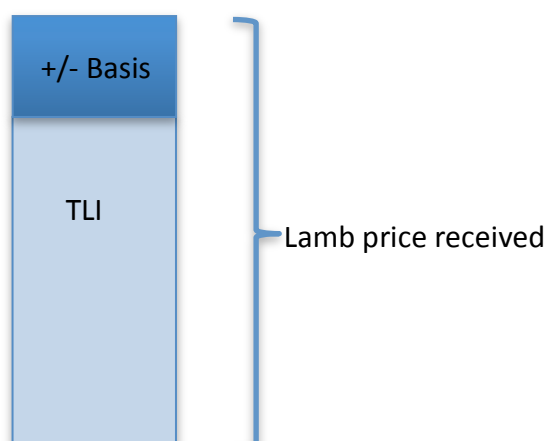
Many of the young farmers this study met with felt confident with this supply contract arrangement and many even did not mind locking in the prices well ahead of sale or if spot market price was higher at the time of sale (R. Tudor, Personal Communication, July 2012; M. Jones, Personal Communication, July 2012) as knowing what prices were months ahead allowed them to better budget and plan their businesses. In Australian conditions this type of contract would give producers the option of committing lambs to a processor and receiving a premium above the current price at the time of slaughter as a reward for that commitment.

2.4.3 Lamb futures or basis supply contracts

This system has been floated in the past in Australia as a possible option but no progression has been made and its relevance is doubtful across the industry. In the UK they are further advanced developing this pricing scheme. Lamb futures contracts are simply a forward price deal that is linked to the physical market through the basis and market indicators (Anon, 2012).

In Australia an excellent market indicator is the Eastern States Trade lamb Indicator (TLI). It is reported weekly based on the prices out of saleyards for trade lambs and is symbolic of the lamb market supply-demand situation across Australia.

Figure 11. Lamb price calculation using a contract basis and trade lamb indicator (Anon, 2012)



Essentially the basis is 'worth' about 10% of the final price and the TLI is approximately 90% of the price, but this is also negotiable.

The benefits for the producer is that the price paid is a true value and allows the building of supply contracts. The processor also benefits from offering firm basis prices as they are easier to negotiate than whole price. They are also less risk compared to traditional forward contracts. Economists at MLA indicate that further research will need to be done to develop a terms of reference and to develop momentum for such contracts to be used.

2.5 The future: a Lamb value chain (not a Lamb supply chain)

An optimised supply chain puts focus on where the value is added to the product. By focussing on what consumers want, and working together to create a product, it is possible to increase the total value of the product and to optimise returns for producers (Parsons, 2009). The key to success is that everyone in the supply chain makes a profit (Gooch, 2013; Saunders *et al.*, 2011).

Chapter 1 has identified that Australian lamb and sheep meat are excellent products to consider a value chain approach. China, The Middle East and India present a potentially very large opportunity to value add non-premium cuts such as trim and offal. The domestic and UK/EU/US high value markets present opportunity to value add premium and non-premium cuts through refinement and packaging. The ability to produce value-added products and cuts will be integral to the lamb and sheep meat industry to maintaining value across the entire carcass, minimise wastage and missed value creation opportunities. If production volumes of lamb are to increase, as will hopefully be the case, the issue of maintaining carcass balance to retain carcass value will undoubtedly arise. Given this observation and the importance of developing and promoting value added products to consumers, it would appear that supporting the development of such products represents an important role for industry associations and would clearly benefit the Australian lamb industry as a whole.

Future growth of the Australian lamb and sheep meat industry therefore needs to come from increased value of production rather than increased volumes. There are three potential

options to improve the value added for agricultural products: better positioning of existing exports in overseas markets, value added processing, and niche production and marketing (Saunders *et al.*, 2011; Zanutto-Filho *et al.*, 2003). The first of these, better positioning of existing products, builds on the changing market requirements and increasing demand for credence attributes, and requires ongoing monitoring on how market changes can be levered to enhance value add products.

Australia has a history of limited access to international markets for our lamb and sheep meat products, and this, combined with Australia's distance from markets, has probably resulted in an industry which has not exhibited a good appreciation of the importance and value of marketing credence attributes. In addition, most processors and retailers operate a very generic grading-based schedule to determine value. This approach treats our lamb product simply as a generic commodity offering limited reward to those who are attempting to tailor their production to meet market specifications, consistent quality and value adding potential. This has led to a potential lack of investment in marketing diversified products, and the acceptance of commodity prices for our output. Surmounting these difficulties will require significant cooperation from all stages of the supply chain from suppliers, processors, and marketers. Achieving these changes will require that supply chains are empowered and able to pass on information and incentives for particular production methods desired by consumers through to farmers. An example of a supply chain initiative to help grow our lamb product in the global marketplace is the MLA-Industry Collaborative Agreement (ICA) program which invests industry funds to partner with exporters to support individual brands and specific marketing activities (K. Joseph, Personal Communication, June 2013). ICAs will be particularly important as the Asian and Middle East markets develop and form a significant proportion of total exports into the future, reducing the dependence on traditional markets of the US and EU.

Despite operating in a commodity focused industry, Australian producers have historically been successful at meeting international market requirements for physical attributes of products, but less successful at increasing incomes by selling the distinctive attributes of our products. There is significant potential to increase the value of our agricultural produce by marketing these non-physical credence values. As discussed above, there is significant and

growing demand and willingness to pay for products that meet customer's desire for quality. The lamb industry undoubtedly has an opportunity to build upon the extraordinarily high level of satisfaction that virtually all lamb consumers have for Australian lamb. Demand appears to be growing fastest at the premium end of the market with increasing consumer interest in healthy differentiated products and a progressively segmented lamb market (Anon, 2013b; Barker, 2013). The overall goal must be to assure a high lamb eating quality at the right carcass specifications and in a highly demanded product form.

Developing value-added, retail-ready, ready-to-eat, or par-prepared food items will drive demand at the premium end of the market and this is an area MLA are actively working on. Chapter 1, section 1.31, outlined value added products on the UK supermarket shelves. In today's busy world of double income households, convenience is a key factor in driving growth. Today's consumers increasingly seek value-added products or ready to cook meals in order to lessen effort in preparation and/or cooking time (Hughes, D. Personal Communication, March 2012). Value added products command a higher price for three main reasons. Firstly, they are costlier to prepare. Secondly, they offer greater value through saving consumers' time in preparation and/or offering greater consistency and a pleasurable eating experience. Thirdly, they can be packaged and presented in ways that appeal to a more discerning experience-hungry (often 'better-off') consumer who is looking for a gourmet meat product. The chicken industry has been a leader/trend setter in value-adding meat (Hughes, D. Personal Communication, March 2012). Value-added products from lamb are a relatively under-developed business segment.

Promoting the health benefits of lamb could also increase consumer awareness of lamb products. Making healthier food choices is becoming increasingly important to many consumers, and the sheep industry could capitalise on this movement. Such an approach would also enable the industry to counter consumers' current perception that lamb is fatty which discourages consumption by health conscious people, especially the younger demographic. This fact ties in with the need to ensure consistent quality; every time a discerning health conscious consumer experiences fatty lamb, they are reminded of why they consume it less readily than other meats that offer a more consistent eating experience (Pethick *et al.*, 2006). Exciting new research from Australian sheep meat researchers (CRC for

Sheep Industry Innovation, 2013) to better understand the genetic and phenotypic impacts on lamb nutritional quality is leading the way in promoting and ensuring lamb remains a good source of minerals such as iron and zinc (Pannier *et al.*, 2010).

Conclusions

Chapter 1 has demonstrated that the lamb and sheep meat sector in Australia is undergoing rapid change, as demonstrated by significant growth, diversification opportunities and potential returns in a number of new potential and existing lamb and sheep meat markets. Emerging markets in developing countries (China, India and the Middle East) represent significant export opportunities for Australian Lamb and Sheep meat. Trends of growing wealth (despite the global economic downturn) and urbanisation in developing countries augur well for future demand. We need to continue to utilise these markets as a way of value adding the entire carcass. However, trade barriers exist in these markets and ongoing attention by industry is needed to secure these markets into the future.

This study questioned the future consumer trends for lamb and sheep meat. Certainly, lamb and sheep meat is unlike the staple meats like beef and chicken. In China, lamb consumption is part of a 'ying –yang' Chinese approach to health. In the Middle East sheep meat consumption is of cultural and religious significance. In India lamb is eaten by a minority who traditionally do not consume beef. In the UK and Australia, lamb is an expensive product but part of our culture and in the US is mainly consumed by the Jewish, Hispanic or Muslim populations, or by others as a very special occasion meal. In the developed countries, even for consumers that consider themselves regular lamb eaters, lamb remains meat that they perceive as best-suited to special occasions and out-of-home consumption. Lamb is perceived as being expensive meat and not considered an everyday purchase, but consumers want value for money. Consumers are becoming ever more interested in the quality of their food and if lamb continues to remain high in price it is essential that quality is maintained. This study has identified that more effective co-ordination between the points of production and final retail sale will be an essential step in orienting the lamb industry into the future by focusing on the consumer.

Chapter 2 advocates that Australian lamb and supply chain needs to move away from a production, commodity-driven supply chain to a market-driven chain, by establishing closer ties between the upstream and downstream partners to achieve greater communication and commitment. By supply chain partners working together to maintain high lamb eating

quality, the Australian lamb and sheep meat industry will remain competitive and able to respond to the changing market environment and evolving consumer demands.

A central issue in improving relations and fostering new partnerships between partners along the lamb supply chain is overcoming the lack of trust between producers and processors which appears to be impeding a long-term industry strategy from being developed. This study discussed the importance of shared values and quality information and feedback delivery between partners to establish greater communication, trust and commitment. Producer group examples linking producers to processors/retailers were highlighted as an excellent structure to develop trust between supply chain partners and open communication and feedback to the producers allowing them to continually adjust according to market requirements.

The different selling and commitment behaviours of sheep producers was described and this study has proposed that contracts and marketing strategies could be designed to vary in the level of commitment necessary, and provide producers with options that better suited their strategic orientation and values. More flexible forward contracts have been suggested as a means to increase commitment between supply chain partners.

This study proposes that future growth of the Australian lamb and sheep meat industry needs to come from increased value of production rather than just increased volumes. Therefore optimising our lamb supply chain requires an ongoing focus on exploring value-adding opportunities to boost lamb demand and product satisfaction. Three potential options to improve the added value of agricultural products were identified: better positioning of existing exports in overseas markets, value added processing, and niche production and marketing. The future implementation of these strategies will require significant cooperation from all stages of the supply chain from suppliers, processors, and marketers so that information and incentives for particular production methods desired by consumers can be passed on to sheep producers.

Recommendations

Lessons learnt during this study indicate the Australian lamb industry needs to continue to develop a strategic business approach or it may miss opportunities to retain long-term profitability and even market share in the face of an increasingly discerning consumer market. It therefore stands to reason that, if Australian sheep producers and meat suppliers do not develop the capabilities necessary to serve the growing international lamb market and take advantage of opportunities that exist ahead of their increasingly capable international competitors, the industry could lose a phenomenal commercial opportunity. The Australian sheep and lamb industry may therefore be at a crossroads. Failing to earnestly invest the resources and determination into capturing market opportunities may lead to the industry slipping in terms of its commercial capability compared to NZ. Following are some specific recommendations:

- The emerging markets in some developing countries, such as China, India and the Middle East, represent significant export opportunities for Australian lamb and sheep meat. The industry needs to utilise these markets as a way of value adding the entire carcase.
- Continued pressure should be placed on the Australian Government to improve trade access to China and India by reducing the tariffs currently placed on Australian lamb and make us more competitive with NZ in these markets.
- Continued access to existing markets and boosting sales in the domestic market will require an approach which repositions lamb as a versatile, value for money, everyday, healthy alternative. Ongoing consumer focus is needed to refine our lamb products to encourage more frequent purchases of lamb.
- To ensure a prosperous lamb industry into the future, industry must develop a thorough understanding of consumer expectations for lamb, along with drivers of choice, augmented with programs for producers to work effectively with processors, retailers to supply desired lamb and lamb products to consumers.

- More formal strategic marketing arrangements along the supply chain will assist producers to meet specifications, build trust in the supply chain and also to engage with emerging markets. Specifically, greater association is needed between farmers to market our products on a commercial level, so encouraging coordinated co-operation of producers through targeted producer groups.
- To further capitalise on the growing demand better communication is needed with those higher up the chain - from customers and processors to stock agents and producers. Producers need to know what the market is demanding in order to determine what, when and how much to produce. Ongoing access to information about prices, trends in the market, and quality standards is essential to improve efficiency both on farm and in the market place.
- The industry can improve supply chain efficiency through better feedback mechanisms. Producers should be encouraging processors to look for tools and technologies that give a more accurate assessment of carcase conformation, giving access to better feedback leading to an improved end product.
- The lamb industry needs to develop better payment systems, assisting sheep producers manage their production risk, which will encourage a less seasonal production and therefore reduce the volatility of returns.

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Appendices

Appendix 1. The importance of better feedback for farmers from processors: Danish Crown experience and how other countries are grading lamb

What grading systems exist in other sheep producing countries: The UK carcasses are also subjectively assessed for conformation and fat score (Yeomans, 2008). The conformation class is determined by a visual appraisal of shape, There are five main classes: E,U,R,O,P (where E=excellent to P=poor). The fat class is determined by a visual appraisal of external fat development. There are five main classes ranging from 1 (very lean) to 5 (excessively fat). Classes 3 and 4 are sub-divided into L (leaner) and H (fatter). There is a strong drive also within the UK industry to move towards objective grading of carcasses and significant industry funds are being used to investigate new technologies (Jones, S. Personal Communication, July 2012). In contrast, NZ use objective tools such as a GR knife (Anon, 2004) are used for determining fat score and are investing heavily into Xray and Video image analysis technology to grade sheep cuts in a highly regimented fashion (Forsyth *et al.*, 2009).

To learn more about future carcase grading technologies relevant for adaption for the sheep industry, I spent some time with Danish Crown, one of the largest and most sophisticated meat cooperative and supply chain in the world. They process a wide range of pork products and export over 90% of what they produce. To spend a week with the most vertically integrated supply chain in the world was a highlight of my Nuffield experience.

Danish Crown own the most advanced meat processing plant in the world located at Horsens, about 3 hours drive from Copenhagen. Integrated into their processing plant are a variety of carcase-grading tools which are used to pay farmers. In the EU all pig carcasses must be graded objectively- not a rule we have in Australia. Alan and I were one of the few visitors who got to go inside the plant onto the slaughter floor. Huge thanks to Henrik Andersen, the MD of Carometec Food Technologies- the director of the largest company in the world selling online meat grading tools for your welcome and time.

The Danish Crown Horsens plant kills roughly 20,000 pigs per day. The plant is located on 80,000sqm. Has 1300 staff over 2 shifts- so 650 each shift. What is amazing is that plants in the US and other parts of the world that are processing a similar size have up to 4000 staff. From lairage up to the boning room there are 150 staff- the rest of the 650 being comprised of cleaners, inspectors and boners. The lairage yards are all automated and pigs are not at all stressed- evident by the almost silent and calm lairage area. They are moved by automated gates and doors up to a CO2 anaesthetising chamber. Following on down the chain is technology that has significantly revolutionised the pig industry- the Autofom by Carometec- an ultrasound scanner that calculates the lean meat yield (LMY) of the whole carcass particularly the saddle and ham regions (Figure 11). Unfortunately this machine is no good for sheep as the removal of the fleece leaves air pockets which ultrasound displays as black image. This data is then used to pay farmers based on primal (not whole carcass) LMY and also amazingly and most importantly- allows the automated sorting of carcasses further down the track. The carcasses are beautifully eviscerated by a laser guided machine- for splitting of the carcasses in half and into primals. There are a number of automated machines further on as well.

Figure 12. Carcass grading technologies in use at Danish Crown plants- the Autofom (L) and the Fat-o-meter (R).



Source: Carometec, Denmark



After chilling the carcasses are automatically sorted into cutting orders depending on market orders. The sorting of carcasses may seem simple but it is a real efficiency driver for Danish Crown. On average each carcass is worth EURO100 to the farmer and the sorting is

estimated to be worth 2Euro per carcass- over 20,000 carcasses- huge gain over a day. Sorting does of course happen at Australian plants but it is based on a carcass weight and manual palpation of fat score. The Danish pork industry also utilises payment systems for LMY that are based on a primal level rather than whole carcass level. More meat in the loin/saddle region is financially valuable than more meat in the forequarter region and this is paid for accordingly. Maybe a similar system for lamb is valid?

Appendix 2. Producer groups- 'If you cannot beat them join them'- highlights from UK sheep producers and supermarkets

To learn more about producer groups, The author headed to the 'home' of producer groups- Wales. Following are case studies on three producer groups discussed during a visit with Hybu Cig Cymru - Meat Promotion Wales (HCC) which is the organisation responsible for the development, promotion and marketing of Welsh red meat (Jones, S. Personal Communication, July 2012). The driving force is very different between the groups but they all facilitate open communication and excellent feedback to the producers allowing their groups to continually adjust according to market requirements.

Livestock Marketing Ltd-Waitrose-Dalehead Foods producer group- Open communication to meet market specifications

To learn about this innovative and highly successful producer group I met with Jon Morgan, Managing Director of Livestock Marketing, Liz Rees, Head of Lamb Procurement with Dalehead Foods and a producer member Richard Tudor, who owns an upland sheep farm in Mid Wales with over 1500 head of sheep.

Livestock Marketing (LM) was established by Jon's father Phillip and essentially acts as an agent for Waitrose and Dalehead Foods (DF) but with a difference. There are over 450 members that supply Waitrose with Welsh lamb through the LM scheme with no membership fees or binding contracts in place.

Waitrose, a high-end supermarket chain in the UK, sells approximately 25% of all lamb sold in the UK. The benefits for them of being part of this scheme is a guaranteed consistent quality lamb and management of supply and processing which has allowed them to extend their market share to twice the national average for retailers in the UK.

At the start of each season LM meets with Waitrose to produce a schedule for the coming season based on expected demand and supply. LM then works with producers within its producer group to identify how many lambs they will have available and gains a commitment from each to supply a certain number. As the season progresses, LM monitor supply and demand and liaise with the producers to book in lambs for slaughter. Interestingly, each Friday LM liaise with Waitrose and DF to set the weekly price. This pricing is done in retrospect- i.e. if a farmer supplies lambs on a Monday they do not know what price they will get for their lambs until Friday. The farmers in this group clearly have a high degree of trust in this producer group. There is even a code of conduct within the group that discourages the members from revealing the prices they receive.

At the end of each season, each farmer in the group gets a comprehensive report on how their lambs performed, in terms of quality and financial breakdown against a group benchmark. This was the major benefit for farmers of this system. Farmers in this group also have access to privileged information on sales and marketing that a retailer would historically not have provided. Feedback from Richard Tudor on the benefits of the group for his business was that the information back to the producers does not just enable them to produce highly consistent lamb it also allows them to make informed decisions about their enterprises. They are able to improve efficiencies and increase revenue in ways that producers outside of this scheme would not be able to. The Waitrose lamb specifications are no different to the other retailers but the industry average is around 56% meeting these specifications whereas the average for producers within the LM group is a 93% hit rate.

In addition, information on the producers within the group is used to boost consumer interest in their product- Richard Tudor and his family are pictured on the packaging of the lamb on the Waitrose shelf with detailed information on his business.

LM supply lamb from late spring to early winter and for the remainder of the year the supply comes from NZ where a NZ processor coordinated a similar group of producers. Both groups are incredibly sophisticated and regularly visit each other to share knowledge and innovate production and marketing methods. This open sharing of information is a great example of a strategic information sharing collaboration and has many benefits including identifying ways to reduce costs or increase revenue.

Wales Young Farmers- Sainsburys-Dunbia lamb Producer Group- supporting young sheep producers

This is a unique scheme aimed at supporting and promoting the Welsh lamb industry, as well as encouraging young farmers to remain in the industry to help achieve a sustainable future supply base. Seventy five members of the Welsh Young Farmers Club (YFC) currently supply Welsh lamb to lamb processor Dunbia (to plants located in Wales) which is sold in Sainsbury's Welsh stores 52 weeks of the year. The product is specially branded with the Welsh YFC logo to communicate the product's history. The young farmers receive a premium for their lamb, with a percentage of sales going to support young farmers' clubs in Wales. The vision for this lamb initiative is to support and encourage young people to remain within the farming industry and to offer a stepping stone for those trying to establish themselves as a supplier of Welsh Lamb.

The scheme continues to go from strength to strength due to the tremendous support it is receiving from Welsh customers and the young farming community. What I saw as exciting was the suite of training and development opportunities hosted by Dunbia and Sainsbury's that were being eagerly undertaken by the young farmers. From regular tours of processing plants and Sainsbury's stores, to training days where the young farmers learnt about different cuts and how to prepare them, to animal health days. They even have a supplier of the year award which places importance within the group of producing a product to its optimum and reaching the specification of the target market. Such a great scheme that is designed to meet the needs of the members and its success really indicated to me that customers wanted to buy regionally sourced food not only because it reflects traditions but because it helps support youth in rural communities. Thank you to Marc Jones, Committee

member of the Welsh YFC for your time not just outlining the program but discussing the challenges and opportunities for young farmers in Wales.

Dolaucothi -National Trust Welsh lamb group – incorporating welfare in a composite premium market strategy

Thank you to fellow Nuffield Scholar Huw Davies, one of the Tenant farmers on The National Trust Dolaucothi Estate in North Carmarthenshire for discussing your innovative producer group and tour of your beautiful sheep farm. Here, seven National Trust tenant farmers have secured a contract to sell Welsh lamb to Sainsburys via processor Dunbia. They are now in their 9th successful year of direct marketing their award winning products. The meat is from traditional Welsh breeds, including Welsh Mountain, Beulah Speckle Faced and Balwen. Lamb finishing is based on seasonal growth of grass with the meat sold during September, October and November. Their product also displays the National Trust logo and has further information on their producer group and the members.

These farmers express responsibility in their role, including pride in the health and welfare of the livestock. They are all members of Farm Assured Welsh Livestock in which standards are continually developed in line with Welsh Assembly policy. During recent years, they have worked on developing whole farm plans that take into consideration not only health and welfare but also management of environmental and conservation aspects of the farm. This has led them to be the inaugural members of the RSPCA's Freedom Food Scheme in Wales.

The producers involved decided that they needed to progress from the tradition of just producing meat for a processor, if their farms were to be sustainable in the future with the new farm subsidy payments. The outcome was a sustainable and mutually beneficial contract within the food chain which demands and rewards high standards of animal welfare on farm. Accreditation is high, and animal welfare is one element of a product for which the primary producer is rewarded through a guaranteed contract with a financial incentive to deliver a consistent product of high quality.

Plain English Compendium Summary

Project Title:		Maintaining our share of the lamb meat pie
Nuffield Australia Project No.:	1210	
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Objectives	To understand the future drivers of demand for Australian lamb and sheep meat in emerging and current markets and discuss ways Australian lamb and sheep meat producers can better capitalise on growing opportunities in these markets. It is also important that producers understand the needs of a consumer base demanding a differentiated high quality product.	
Background	Export demand for Australian lamb and sheep meat is steadily growing in emerging markets and represents significant opportunities for producers. Understanding market drivers and boosting our supply chain efficiency is essential for a successful and sustainable industry into the future.	
Research	Research involved meetings with all levels along the lamb and other meat supply chains around the world – from sheep producers, processors, stakeholder groups, researchers, government and international traders and customers. Countries visited included China, the Middle East, UK and Denmark.	
Outcomes	Emerging markets in developing countries- China, India and Middle East represent significant export opportunities for Australian Lamb and Sheep meat but continued pressure on government is needed to improve trade access. Australian producers need ongoing consumer focus to refine their lamb products and to improve our supply chain efficiency through better feedback mechanisms from those along the supply chain. More formal strategic marketing arrangements all along the supply chain will assist producers to meet specifications but to also engage with emerging markets.	
Implications	The Australian lamb industry needs to continue to develop a strategic business approach or we may miss opportunities to retain its long-term profitability and market share in the face of an increasingly discerning consumer market. Failing to earnestly invest the resources and determination into capturing market opportunities may lead to the industry slipping in terms of its commercial capability.	
Publications	Findings have been presented at various conferences and in the rural press.	