Asian Export of Branded King Island Wallaby

Stage One Proof of Concept

This project was conducted by the University of Tasmania, through the Tasmanian Institute of Agriculture, the Centre for Food Innovation and the Tasmanian School of Business and Economics for Department of Primary Industries, Parks, Water and Environment (DPIPWE) Agricultural Policy Branch

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Project details

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Summary

Objective
To provide an assessment of the feasibility of establishing wallaby meat exports as a viable business for King Island stakeholders.

Background
The King Island wallaby population has no predators and the high animal numbers impact on farming profitability through overgrazing in competition with livestock. The current sale of meat from culled animals is a cost to the farmer and sales are limited by both the size of the local market and the Australian image of wallaby as a low-cost bush meat. The research, therefore, examined the feasibility of sustainable harvest with more profitable returns from the meat by selling it as a premium branded product to niche, high-end Asian markets.

Research approach
The research stages were:

- Analysis of the nutritional profile of wallaby meat to determine a strategy for using health properties as a potential way to raise the value of the product
- Local restaurant trials to confirm the eating and taste quality acceptability of wallaby meat for Asian consumers and to identify issues that might impact on its perceived value
- Interviews with produce buyers in high-end Shanghai restaurants to understand customer issues and estimate the possible value of wallaby as a premium product in Asia
- Development of marketing and branding recommendations for sale into Asian markets
- Estimation of the harvesting, shipping and logistics barriers and costs for access of wallaby meat to Asian markets
- Calculation of whether Asian markets might pay a premium sufficient to both offset supply chain costs and provide a return to farmers to compensate for lost pasture production.

Results

Nutrition and health benefits
An analysis of King Island wallaby meat for possible health benefits has shown that:

- It is ultra-lean with less than 1% fat versus 10% for beef
- Its low fat nature gives it an exceptionally low calorie content that is nearly 50% less than other common red meat sources
- It is very high in protein at 22% w/w
- The iron content is only 66% that of beef and 41% that of kangaroo.

Therefore, to aid sales and value, wallaby can be branded in Asia as being exceptionally healthy.
Eating quality and perceptions of King Island wallaby meat for Asian consumers

Restaurant trials were undertaken using a top local Chinese restaurant. The chefs prepared a wallaby carcass to give a variety of cuts that were cooked into six dishes related to traditional Cantonese cuisine. The meat preparation and cooking was filmed in Mandarin with English subtitles and posted on YouTube at https://www.youtube.com/watch?v=hXNSYqwft7k.

A focus group of representative high-end Asian consumers revealed that:

- The wallaby meat was versatile and highly acceptable to Asian tastes
- All parts of the carcass were valued when prepared in appropriate dishes. However, the tail soup was felt to be the most elegant and classical Chinese-style dish and thus considered as having the most potential to command the highest value
- The meat was perceived as very tender, in contrast to expectations
- Participants felt that wallaby was a small kangaroo. They did not conceptually recognise wallaby and kangaroo as being different
- Creating product awareness (currently unknown in Asia) would be the biggest challenge
- Currently imported products such as abalone and crayfish attract a high price premium and are often purchased at restaurants as a way of demonstrating affluence and importance to guests. Wallaby would need to emulate this status to attract a high price.

Response of potential product buyers in Asia

Market research was conducted in Shanghai using face-to-face interviews with high-end restaurant managers. It was found that:

- Restaurants require a good understanding of basic information surrounding new products before they would consider using them
- Chefs need to know correct handling and preparation methods of produce so that they can add the restaurant’s features to the traditional methods of cooking and develop better dishes
- Tasting or trials would be important to eliminate differences between expectations and reality
- Restaurants need to be assured there is a sustainable procurement practice for meat products to guarantee a stable long-term supply to meet demand
- Younger consumers were perceived to have more open ideas and a higher acceptance of new products and would, perhaps, more easily accept wallaby meat
- The psychological factor behind eating a ‘cute’ animal like a wallaby would be a marketing challenge to overcome
- ‘Wallaby’ translates in Mandarin to ‘small kangaroo’ but the translation of ‘kangaroo’ 直鼠 relates it to a marsupial (pouched) 袋 rodent like a ‘rat’ 鼠. Therefore, the translation of ‘wallaby’ negatively influences its potential marketing and consumer acceptance.

It was recommended that:

- The challenge of supplying the required quantities of meat for the greater Chinese market could be addressed by only selling to selected high-end restaurants
- The approach of targeting the selected narrow market would aid in more easily focusing and communicating product information to buyers and consumers to build reputation and value
- An invented new branding name be adopted for the meat product instead of ‘wallaby’
Branding and values

Based on discussions with restaurant buyers and the Chinese researchers, it was concluded that:

- The value of the product in China or similar markets would ultimately depend on the success of branding and communication.
- The value of kangaroo in the Chinese market is low due to it currently being sold through the non-official ‘grey trade’ and its perception of tasting ‘sour’ (meaning ‘gamey’).
- Australian provenance has to be highlighted in the branding, but King Island origins should be used as the central brand attribute for the selected high-end restaurants.
- The brand strategy would need to position wallaby meat away from kangaroo meat in order to achieve a premium and to emphasise the difference in origin and quality.
- A suggested brand name that avoided reference to kangaroo was the Mandarin translation equivalent of ‘Australian Bush Rabbit’ or specifically ‘King Island little marsupial rabbit’, ‘Guo Wang Dao Xiao Dai Tu’.
- Branding wallaby meat for rarity/exclusivity, wild harvest sustainability, provenance, health properties, superior taste and eating qualities might enable it to sell at a higher margin than premium beef.
- King Island should use a premium pricing method in accordance with the King Island brand.
- Wallaby meat prices should be benchmarked to be equal or higher than equivalent cuts of Australian imported beef costing AUD25-50 per kilogram retail with extra premium cuts like Grain Fed Veal Rib Fillet costing AUD63 per kilogram.

Supply chain issues and costs v Asian market values

- Entry to the Chinese market, or similar Asian markets, is possible but requires significant understanding of, and successfully dealing with, many points along the supply chain.
- There would be issues with regard to current fresh chilled export capacity. However, supply chain costs of harvest through to export destination would be only moderate in the range of $7.60 to $9.80 per kilogram.
- It was concluded that a value chain including a return to farmers would be possible. This may be up to $10 per kilogram depending on the success of generating a premium in the Asian market related to the top end of beef prices and assuming a 100 per cent mark-up from wholesale and marketing costs.

Conclusions

- A value chain successfully selling wallaby meat to Asia at premium prices is possible if all aspects of the chain are correctly addressed.
- A value chain supplying premium branded wallaby meat could provide a return to farmers instead of culling being a cost.
- The major issue for export would be the establishment and licensing of an on-island multispecies abattoir and the Federal veterinary inspection required for the Chinese or similar Asian markets.
- A culinary name for wallaby meat, that separates it from kangaroo, is needed in the Asian market.
Recommendations for implementation

- A King Island stakeholders group should develop options, approaches and a business plan to establish a wallaby export value chain operation targeting high-end restaurant markets.
- The value chain would need to include farmers as the producers, as well as processors and marketers, for common focus on delivery of a premium meat product and a share of value to be returned to all parties.
- The King Island stakeholders should secure ownership of a brand around a culinary name for wallaby in the Asian market on which further brand value could be built.
- A sustainable harvest practise to maximise the supply of premium animals for meat while maintaining a stable population in balance with beef or dairy production should be developed in place of current mass culling of animals.
- The yield and value of prime wallaby meat obtainable from harvesting should be compared to the value of lost grass production to determine if wallaby meat can adequately compensate for lost production.
- The costs of establishing an abattoir to process up to 40,000 animals per year and meeting export market licensing requirements should be determined in detail as the first step to understanding the viability of implementing an export operation.
Introduction

Background to King Island focus

King Island makes a significant contribution to Tasmanian agriculture through its established beef industry and reputable dairy, cheese, seafood and kelp sectors. The island itself is relatively small (about 64 km long and 26 km wide), yet it accounts for approximately 20 per cent of Tasmania’s cattle herd (Felix Domus 2013). Over 50 per cent of the Island is pasture (ABS 2014). The Island produces high yielding, reliable pasture due to the mild and relatively stable maritime climate, abundant rainfall and almost non-existent drought or flood conditions. Recent figures suggest that there are approximately 120 beef cattle raising properties on King Island covering approximately 50,000 hectares of pasture land (Felix Domus 2013). Approximately 16 dairy farms based on the island supply the King Island Dairy processing facility just north of Currie.

King Island is in a remote location and therefore incurs additional costs in processing and logistics for getting food products to market. These extra costs impact on the economic sustainability of King Island agriculture. It is therefore desirable to identify and focus on crops and products where King Island production can have a competitive position over alternate supply sources and, thus, have a means to off-set the higher costs.

Currently, no significant advantages have been found for current or potential future crop products. The natural cool and damp climate of King Island does provide advantages in pasture based production systems supporting a beef and dairy industry (R. Thompson, personal communication, 16 September 2013). Beef production, with an estimated 30,000 head per year, has, however, been rendered less viable by the closure of the on-island abattoir and the consequent need to transport animals off the island for processing. Additional value is therefore needed to make up for the extra costs associated with King Island based production.

King Island food producers have long used a quality and provenance based branding strategy. For example, JBS Australia, in strategic alliance with the King Island Beef Producers Group, produces and markets King Island Beef on a quality and provenance basis, with the Coles supermarket chain paying producers a premium price. Likewise, Greenham also produces the ‘Greenham Tasmania Natural Beef’ brand, along with their ‘Cape Grim Beef’ and ‘Never Ever’ program for the US market. Their products are differentiated based on a clean green image and the cattle not being exposed to hormones and antibiotics.

The success of premium King Island pasture based products is, however, being undercut through overgrazing by increasing numbers of wallaby. King Island’s remote location, extensive high quality pasture and low-lying, mostly cleared landscape make an ideal location for the herbivorous native animals. For many years the island has had an extensive Bennett’s wallaby population which feed on pasture produced for cattle and result in substantial lost production opportunity for the producers. Past research trials have shown that between 17 per cent and 100 per cent of pasture can be lost to wallaby grazing (DPIPWE 2010). Annual pasture loss to wildlife browsing on King Island could be up to 1.2 tonnes of dry matter per ha which is $436 per ha for a beef enterprise (DPIPWE 2011). Stocking rates are seriously affected. Wallaby grazing/browsing also creates problems for germination of new pasture.

Different strategies to contain and limit the damage have been trialled. Control by poisoning has been abandoned due to its potential damage to the ‘natural’ brand image of King Island. The alternative of fencing to exclude wallabies from pasture does not address the ecological issue of...
excessive damage to native vegetation due to the high animal numbers. In addition, fencing is less viable on King Island due to the interspersed nature of shelter trees and vegetation with pasture (Norton and Johannsohn 2010).

A population of between 440,000 and 535,000 Bennetts wallaby was estimated to be foraging in pasture on King Island (Branson 2008) although the population may have increased yet further. Desirable levels that reflect a sustainable population could be maintained with an annual cull. The commercial quota for King Island in 2009-10 was 10,000; non-commercial 23,000 with a maximum harvest of 33,000 (Department of Environment 2010). However, culling to destroy excess numbers of wallaby is currently an on-going cost which is expensive to undertake at the scale required to maintain acceptable levels of animals. Culling without utilisation of the carcasses is also perceived as morally wasteful. A culling program cannot succeed in the long-run as a sustainable population of wallaby must be maintained but no alternative predator control exists. Therefore, under existing strategies, King Island wallaby will continue to be a burden on pasture based industries with high numbers causing excessive ecological damage to native flora.

Harvesting of wallaby for meat is a potential contribution to maintaining a stable population of wallaby. However, to be workable in the long-run, harvesting has to be economically viable in the context of net returns from pasture based production systems. The costs of harvesting need to be offset by the sale of harvested product. Composting of wallaby carcasses or rendering of wallaby carcasses to meal can be a source of income but the products are of low value and not able to compensate for the loss of meat or dairy value forgone by grazing wallaby.

The harvest of approximately 1.5 million kangaroos in Australia (Department of Environment 2010b) supplies the market with game meat for pet food and human consumption. It is amongst the cheapest meat available in the supermarket with mince retailing as low as $9 per kilogram and fillet at $22 per kilogram (Coles and Woolworths Supermarkets, 14 April 2015). Supermarket price comparisons showed that wallaby and kangaroo meat retail in around the same low price range indicating that neither is highly valued by Australian consumers (Appendix E: Supermarket prices). The sale of King Island wallaby meat is therefore possible but the local and national market for wallaby meat is limited and easily satisfied by other more accessible Tasmanian sources. Moreover, the prices being achieved are not high enough to support a self-sustaining wild harvest operation that would return value to farmers.

Potential exists in that international markets may place a far higher value on wallaby meat if it was perceived as a new and exotic meat with excellent eating and health qualities. Wallaby meat is perhaps the most unique product, within an international context, that King Island can produce. If the premise of high added value in Asian markets can be validated, sufficient returns could be made from wallaby meat products to pay a harvest fee to farmers. A harvest fee that was sufficient to compensate farmers for lost pasture production would eliminate the costs of culling for farmers and foster options for maintaining the balance between King Island beef production and wallaby harvesting.

**Research objectives**

This research aimed to explore the feasibility of developing an Asian market that values King Island branded wallaby products at a sufficient premium over beef to compensate for the additional processing and handling costs incurred. Stage one of this project sought to estimate the likely maximum value of premium branded wallaby in the high-end Chinese market. Thus, the research objectives were to:
1. Analyse the nutritional profile of wallaby meat to recommend a strategy for using health properties as a potential way to raise the value of the product
2. Confirm the eating and taste quality of King Island wallaby meat for Asian consumers using a local Asian restaurant and identify issues that might impact on its perceived value
3. Interview high-end restaurants in Shanghai as an example Asian market to understand their meat sourcing and customer issues and estimate the possible value of wallaby as a premium product in Asia
4. Contrast the attributes of wallaby meat to kangaroo meat to understand issues that may govern the relative values of the two sources in the Asian market
5. Recommend potential branding strategies for King Island wallaby in the Chinese market
6. Estimate the harvesting, shipping and logistics barriers and costs for access of wallaby meat to Asian markets
7. Calculate whether Asian markets might pay a premium that was sufficient to both offset the supply chain costs and provide a return to farmers to compensate for lost pasture production.

Subsequently, the report was to recommend the desirability for DPIWE to proceed to Stage Two: Export protocol development based on the likelihood of potential value and perceived barriers to the export of King Island wallaby.

The research stages to realise the objectives were:

**Nutritional analysis of wallaby meat**

The first stage of the research project aimed to ascertain the health properties of wallaby meat. Health properties of food are a major consumer driver for purchase and thus influence the potential value of products. Nutritional analysis of wallaby meat from King Island was therefore undertaken to determine if features or aspects of the nutritional profile could be highlighted as health benefits in the Asian market. Additionally, the nutritional analysis of Bennetts wallaby meat had not previously been published and was assumed to be the same as kangaroo meat. Publication of the actual nutritional profile for Bennetts wallaby would allow correct food panel labelling of wallaby meat and highlight any potential differences from kangaroo.

**Source and preparation of meat cuts**

Four eating-size Bennetts wallabies (two medium bucks and two medium does representative of animals supplied to the food trade) and two large bucks (older animals not normally used for food) were harvested from King Island by a professional shooter in July 2014 as part of a licensed ongoing culling and meat supply operation. The loin and rump from these animals were processed the same day by a local butcher. Each cut was vacuum-sealed and labelled according to size, gender and cut. The meat cuts were transported chilled via air to Launceston arriving at 4°C. The cuts were then stored refrigerated as vacuum packed meat at 4°C until sample preparation 10 days after harvest.

**Preparation of meat samples for analysis**

Duplicate samples of loin and of rump and a combined loin/rump sample were prepared by first mincing 500g portions from each of the four eating sized animals in a kitchen food processor. The combined sample was made by blending a 25 per cent sample of the appropriate cut from each animal. Additional proportionally blended samples were made of the meat cuts from the two large bucks. Samples were vacuum-sealed and identified according to cut and animal origin. Samples
were transported chilled via air to the Australian Laboratory Services Food and Pharmaceutical Laboratory (ALS) in Melbourne for analyses.

**Analytical methods**

Samples were analysed for macronutrient composition including protein and fat as required under FSANZ regulations for a Food Nutrient Panel. Additional analyses of micronutrients were undertaken to look for potential compositions that may distinguish wallaby meat from other common meat sources. For minerals this included iron, phosphorus, selenium and zinc and for vitamin analyses it included cobalamin, niacin, pyridoxine and riboflavin. Due to budgetary restrictions, not all samples were tested for all stated micronutrients. Details of the samples analysed, including the nutritional analyses completed on each sample and the analytical methodologies used by ALS to determine wallaby meat composition, are included in Appendix A.

**Analytical results and discussion**

**Energy and macronutrients**

Table 1 (below) depicts the nutrition information panel data for industry. In particular, it details the average energy and macronutrient content of wallaby rump and loin compared to kangaroo and beef fillet (FSANZ 2010). Table 1 also compares the composition of these meats to current average adult Australian Recommended Dietary Intakes (RDI) or Adequate Intakes (AI) for these nutrients (National Health and Medical Research Council 2006).

Nutrient analysis of wallaby meat demonstrated a high protein and low energy content that reflect the low fat profile. Whilst the protein content is comparably high across all three meats at 33-46 per cent of the average adult RDI per 100 grams, wallaby has more than 10 times less total fat than beef with over nine times less saturated fat. This low fat profile allows wallaby to have almost 50 per cent less energy than beef whilst maintaining a comparably high protein content.

**Table 1** Energy and macronutrient composition and other nutrition information panel data of King Island Bennett wallaby loin and rump, Australian kangaroo fillet and beef fillet

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Amount per 100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Units)</strong></td>
<td>Wallaby</td>
</tr>
<tr>
<td>Energy (kJ)</td>
<td>418.4</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>21.7</td>
</tr>
<tr>
<td>Fat - Total (g)</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat – Saturated (g)</td>
<td>0.4</td>
</tr>
<tr>
<td>Fat - Mono (g)</td>
<td>0.2</td>
</tr>
<tr>
<td>Fat - Poly (g)</td>
<td>0.2</td>
</tr>
<tr>
<td>Fat - Trans (g)</td>
<td>0.125</td>
</tr>
<tr>
<td>CHO - Total (g)</td>
<td>0.96</td>
</tr>
<tr>
<td>Sugar (g)</td>
<td>0.28</td>
</tr>
<tr>
<td>Sodium (mg)</td>
<td>41.6</td>
</tr>
</tbody>
</table>

¹FSANZ Nuttab 2010

² All Nutrient Reference Values (NRV's) are based on average adult RDI/AI.

**Minerals**

Meat is considered one of the richest dietary sources of iron, phosphorous, selenium and zinc. This is supported by data from mineral analysis of wallaby as shown in Table 2 (below). One hundred
grams of wallaby meat contains >25% RDI phosphorous and 24-41% RDI zinc. Interestingly, wallaby contains >50% less iron than kangaroo and >40% less than beef.

Table 2 Mineral composition of King Island Bennett wallaby loin and rump, Australian kangaroo fillet and beef fillet

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Amount per 100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wallaby</td>
</tr>
<tr>
<td>Iron (mg)</td>
<td>1.4</td>
</tr>
<tr>
<td>Phosphorous (mg)</td>
<td>210</td>
</tr>
<tr>
<td>Selenium (mg)</td>
<td>0.02</td>
</tr>
<tr>
<td>Zinc (mg)</td>
<td>3.3</td>
</tr>
</tbody>
</table>

¹FSANZ Nuttab 2010
²All NRV’s are based on average adult RDI/AI.

Vitamins

Vitamin analysis of wallaby meat has shown it is a rich source of riboflavin with double the content of kangaroo and four times the content of beef (Table 3, below). Additionally, wallaby meat contains a higher content of niacin compared to kangaroo with 100 grams providing >40% RDI. Wallaby is also a superior source of vitamin B6 compared to beef. Whilst beef maintains the highest content of B12 across the three animals, wallaby still provides almost half the RDI for this vitamin per 100 grams.

Table 3 Vitamin composition of King Island Bennett’s wallaby (loin and rump) with Australian kangaroo fillet and beef fillet

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Amount per 100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wallaby</td>
</tr>
<tr>
<td>Riboflavin (mg)</td>
<td>0.08</td>
</tr>
<tr>
<td>Niacin (mg)</td>
<td>6</td>
</tr>
<tr>
<td>B6 (mg)</td>
<td>0.05</td>
</tr>
<tr>
<td>B12 (ug)</td>
<td>1.14</td>
</tr>
</tbody>
</table>

¹FSANZ Nuttab 2010
²All NRV’s are based on average adult RDI/AI.

Comparison of the nutrient content of wallaby, kangaroo and beef

Nutrient analysis of King Island wallaby meat has shown that, like kangaroo, it is an excellent low energy, lean source of protein. Additionally, wallaby is a good source of phosphorous, zinc, riboflavin and niacin when compared to the Australian nutrient reference values. Although still a valuable source of B12 and iron, wallaby contains lower levels of these vitamins and minerals when compared to kangaroo and beef. Bennett’s wallaby is, therefore, an exceptionally lean, nutrient-dense meat and could be marketed on a health basis of providing a low energy density source of protein, minerals and vitamins without the fat. With a nutrient content similar to kangaroo, the greatest differentiation between commercial kangaroo and King Island Bennett wallaby meat is likely to be on taste and texture.
On-shore restaurant consumer study

In addressing the second objective of the research project, a consumer focus group was held in Hobart, Tasmania in December 2014. The purpose of this focus group was to gain preliminary insight into the perceptions and awareness of and responses to wallaby meat by top-end Chinese consumers. The focus group involved six Chinese participants – five females and one male. The age range was between 27 and 55, with most being in the 27-35 year age bracket. All participants held University degrees (Bachelor level or above). Three participants held a masters/PhD level qualification in business and marketing, with experience in Australian and Chinese business practice.

The focus group was held in a leading Tasmanian Cantonese restaurant. Two medium wallaby carcasses were supplied by the butcher on King Island and processed into cuts by the restaurant chef. The different cuts were then used in a selection of six dishes (given as photographs in Appendix B) reflecting styles of traditional Cantonese cooking adapted for the wallaby meat. The preparation of the cuts and the cooking was photographed and filmed in Mandarin and then translated into English subtitles for use in the subsequent restaurant interviews in Shanghai. The video is posted on YouTube at https://www.youtube.com/watch?v=hXNSYqwft7k (note subtitles need to be turned on in settings).

The focus group ran over one and a half hours, with participants asked to taste the range of wallaby-based dishes that had been prepared and served in a Chinese style. Participants were asked to reflect on the flavour, texture and style of the dishes served and provide feedback on their perceptions. In addition, participants were questioned about their existing perceptions and awareness of wallaby meat and their perspectives on issues in marketing the product to Chinese consumers.

Key findings

Outlined below is a summary of the main findings/observations gained from the focus group.

Existing awareness and perceptions of wallaby

While all but one of the participants were familiar with wallaby (having lived in Australia for extended periods of time), none had previously tasted wallaby meat. When probed further, none of the respondents had tried other Australian game meat products, including kangaroo. Their awareness of the product extended to it being a native Australian animal; learned only after arriving in Australia. One of the main issues raised by all participants was that most Chinese consumers would not know of wallaby and, at best, would only be aware of kangaroo as an animal, not as a meat protein. Participants felt that there would be a major issue in distinguishing wallaby from kangaroo as, to most Chinese consumers, they looked physically the same (a common statement made was, “isn’t wallaby just a small kangaroo?”). There were some concerns raised that the ‘cute’ nature of wallabies (their general appearance) may make some consumers reluctant to try wallaby meat products. There was also a question raised about the ‘ethics’ of eating a native/wild meat product, especially as some Chinese consumers have become wary of this in the context of Chinese medicines and food such as shark fin and sea cucumber (e.g. WildAid 2011). Considerable effort would need to be made to explain the sustainable harvesting of wallaby meat. Despite this, all participants expressed a willingness to try wallaby meat products and were attracted by the novelty of trying something new.
Taste, flavour and mouth feel
After tasting the different dishes, participants were asked for their perceptions of wallaby meat. All participants reported a strong liking for the meat across the different dishes and cooking styles. The group agreed that the taste of wallaby meat was somewhere between chicken and beef in terms of a Chinese pallet. There was no perceived bitterness and the meat was not viewed as being ‘gamey’ in flavour by the respondents (although a couple highlighted that this might have been due to the style of cooking and flavour used in the dishes). Overall, the group found the meat to be very pleasant in flavour and suitable to a Chinese pallet.

In terms of texture and mouth feel, the group commented on the tenderness of the meat and ease with which it could be eaten – irrespective of the style of cooking or the cut of meat used. The flavour of the meat came through strongest in the tenderloin and leg shank dishes and was least noticeable in the tail soup. Respondents expressed some surprise at the tenderness of the meat given the size of the animal; there appeared a perception that a small animal like wallaby might equate to a tough meat protein.

Styles of cooking
Of the dishes served to the group, the tail soup, tenderloin and scotch were considered the best in taste and mouth feel. The tail soup was felt to be the most elegant and classical Chinese-style dish. The flavour of the wallaby meat went well with the traditional herbs and vegetables used in the broth. Participants also felt that this dish would be the one that could be sold at the highest price and would be perceived as having the greatest ‘health benefits’; Chinese style soups such as this are often thought to have good health properties. The tail meat was also made very tender by the cooking process.

The sirloin dish was also liked by most participants and was considered on a par for taste and texture with similar dishes traditionally made with beef. In fact, the group could not note a significant taste difference from the beef version. The group felt that the leanness of the sirloin wallaby meat and style of preparation would make this an ideal dish to serve for business lunches and therefore had the potential to attract a reasonable price premium.

The scotch dish was felt to be the tastiest of all the dishes served and was seen to be more like a ‘home-style’ or ‘comfort’ dish. The group felt that this dish would be one of the most acceptable to Chinese consumers. However, because it was a home-style dish it would be difficult to charge a high price for this meal in restaurants. Of all the dishes served, the front leg cuts were the least popular with participants. The feeling was that this dish was not in a proper Chinese style and tasted ‘Western’.

Overall, participants felt that wallaby meat was a good match for Chinese-style cooking and balanced well with the flavours used in Chinese cooking. A point that emerged through discussion was the quality of cooking – while the chefs at the restaurant were highly trained, participants wondered if chefs on mainland China would have the skills to cook wallaby meat to the same standard. They felt that much of the flavour and tenderness could be put down to the quality of preparation rather than the meat itself.

Branding and marketing issues
Participants agreed that one of the major issues facing the export of wallaby to mainland China would be creating awareness of the product. Participants felt that there were very low levels of knowledge among most Chinese consumers about new foods such as wallaby. Chinese consumers
have a strong preference for traditional styles of cuisine and integrating new food types into this cuisine would be challenging. There was even some debate amongst the group about the correct Chinese word for wallaby and the characters that would be used for the name. A lot of effort would also need to be directed at distinguishing wallaby from kangaroo meat. Participants agreed that considerable effort would need to be invested in creating awareness and knowledge amongst Chinese consumers and restaurant staff.

There was some discussion with regard to presenting wallaby based products on the menu and how to explain the product to Chinese consumers in a restaurant situation. Menus in Chinese restaurants tend to be very long with many dishes. They also tend to be grouped by type of dish, for example, pork-based, seafood-based and vegetable-based rather than by where they are eaten in the meal. In addition, dishes tend to be ordered by one person in a dining party, with little consultation with the waiting staff. A new dish made with wallaby meat may simply be ignored by customers. As a consequence, careful thought would need to be given to the type of restaurant targeted with this product as well as the location of such restaurants. For example, there was a feeling that places like Hong Kong and Guangzhou may be most suitable as people in southern China are considered to be more experimental in their willingness to try new foods.

Participants felt that focusing on the health properties of wallaby meat may be a good way of getting people to initially try the product. Chinese cuisine has, at its core, a focus on the health properties of food. Modern consumers are increasingly focused on issues like fat content, preservative use and overall food safety. When informed about the low fat content of wallaby meat there was some agreement that this could be a selling point.

**Restaurant issues**

As previously mentioned, there were some concerns raised about the ability of Chinese chefs to cook wallaby meat correctly. Participants felt that Australian chefs were very well trained and, as such, were well placed to experiment with cooking new types of food. However, many restaurants in China do not have such highly qualified staff and, as they would be unfamiliar with wallaby meat, they may not have the skills required to cook the meat correctly. Participants felt that if the meat was poorly cooked then this might turn Chinese consumers away from the product. Therefore, it was agreed that extensive training and resources would need to be provided to ensure the wallaby meat was properly cooked.

The final issue discussed with focus group participants was the aspect of pricing. Participants discussed price as a powerful indicator of quality and status. For example, dishes such as imported abalone and crayfish attract a high price premium and are often purchased at restaurants as a way of demonstrating affluence and importance to guests. Cheaper dishes are considered as being of a lesser status and would be more likely considered as being home-style dishes and subsequently only ordered if dining with family. As such, careful consideration would need to be given as to how wallaby meat/dishes were priced, relative to the status positioning of the product.

**Shanghai restaurant study**

Australia is already a large supplier of red meat to China, with shipments worth $616 million (NZD691 million) in the 2012/13 season (Packham 2013). The mammoth size of the Asian and, more specifically, the Chinese market, as well as the potential for high-value market niches, provides a great opportunity for the wallaby industry. To understand the opportunity and the associated issues, 15 qualitative interviews were conducted with restaurant managers and chefs in targeted high-end restaurants in China. These interviews aimed to test market viability and to
explore consumer responses to wallaby meat in terms of product familiarity, adaptation and preferences.

Three fine dining Chinese restaurants, three fine dining Western-style restaurants and nine five-star hotel à la carte restaurants were included in the research. More than 50 initial restaurants were shortlisted and contacted to check their availability and willingness to participate in the research (allowing voice recording). Only 20 agreed to participate. From this group, 15 restaurants were selected.

Nine five-star hotel restaurants with hotel chains nationwide were selected for this research. Seven of them were situated in the Shanghai metropolitan area: one in Hainan Sanya city which is the most popular tropical tourism destination in China and one in Yantai Shandong Provence which is close to the Yellow Sea. Yantai Shandong Provence’s restaurants are particularly appealing as they have a strong South Korean population whom are known to particularly enjoy barbecued meats. Among the 15 restaurant managers who were interviewed, 12 (80 per cent) were males aged between 35 and 42 years old with more than 10 years of hospitality experience. The other three female managers were below 30 years of age.

**Research purpose**

The objective of this phase of the project was to gather information on the likely response of high-end Chinese restaurant customers to the product. Based on this, the research aimed to determine an appropriate pricing method for wallaby, to estimate the overall market value and to provide the best branding approaches for King Island wallaby in the Chinese market. More specifically, the research targeted:

- How factors such as provenance, health and branding influence restaurant buyer and customer perceptions
- What customers of high-end restaurants know about wallaby meat
- What value might wallaby meat command in high-end restaurants, possibly through its relationship to other exotic meats such as kangaroo or Australian beef
- The best approaches to branding wallaby meat in the Chinese market.

**Key findings – detailed interview example**

The following section provides an in-depth consideration of one of the interviews conducted in Shanghai. This detailed look provides insight into the opinions and knowledge-base of the chef and restaurant manager.

**Product familiarity**

The chef had been to Australia previously and had personally worked with kangaroo meat, using the meat in an Australian style of cooking. He described the flavour as being similar to beef but slightly dryer. However, both he and the restaurant manager were unfamiliar with wallaby meat. Both felt the flavour of the meat itself would be fine for Chinese consumers but it would need to be prepared and cooked in a way that would appeal to the market. The chef felt that something like a stew or burgers made from the meat may be the best way of serving the wallaby. When working with kangaroo meat previously, the chef had had the carcass butchered for him and said this was his preferred way of operating with meats.

The chef was aware of wallaby as being a smaller kangaroo but the manager at first thought wallaby was a type of beef (like wagyu). In terms of cooking, neither was aware of the differences
between kangaroo and wallaby and how the taste may differ. Both also believed most Chinese consumers would probably be unaware of what a wallaby was. They had concerns that if it were explained to them, most would not see it as a source of food but rather as a cute, lovable animal. This presents an obvious marketing issue.

**Processing and handling of wallaby meat**

The chef required pre-butchered meat as he was not well-equipped or staffed to butcher large quantities of meat on-site. In addition, whole carcasses were impractical as it was recognised that it would be difficult to find employees with the skill to butcher wallaby carcasses. Additionally, there were concerns about hygiene and legalities surrounding food preparation if whole carcasses were to be imported and used. Generally, meat was delivered to the restaurant refrigerated. However, another method such as vacuum sealing may be appropriate for meat imported from Australia because of logistical reasons.

Within this restaurant, meats were selected to suit demand at the time. Occasionally, the restaurant held a ‘limited time only’ special dish(s); generally for a period of one month. Management showed interest in serving wallaby meat in this capacity. The market for wallaby meat was deemed to be small but management believed that individuals may be willing to pay a price premium. Exactly how much premium would be acceptable to customers was unclear. Whilst imported meat is significantly more expensive in China than locally grown meat, according to the chef, the quality difference is generally not perceived to be great by the majority of Chinese.

Generally, premium meats such as abalone are used for specific occasions such as weddings. In such cases, the restaurant ordered as required but usually they kept low volumes of these meats on hand. It was difficult for the chef to estimate the volume of wallaby meat required for the restaurant per week/month because of the uncertainty regarding demand.

**Information needs and product adoption**

To consider using wallaby meat, the restaurant would require demonstration by another chef (preferably an Australian/Chinese chef) on how best to cook this meat in a Chinese style and to suit Chinese taste preferences. This demonstration would also need to include how to prepare and store the meat and potential recipes that could be used. Without this type of information, the restaurant would probably be unwilling to begin serving wallaby meat. The chef made the point that potential business partners must approach them with product offers and be able to demonstrate benefits. The restaurant does not actively pursue new products. According to him, the main barrier to trialing new products in this case would be the ‘cute’ and ‘innocent’ perception of the animal.

The chef and manager of the hotel believed that the health benefits would be somewhat valuable to Chinese customers as many Chinese people have become increasingly health conscious in recent times. They considered the origin of the meat and its sustainable harvesting process to be of less significance to the Chinese majority but to certain consumers this could add value to the product.

**Customer preferences**

The collectivist nature of the Chinese indicate that the market as a whole may be less receptive to new types of products or services unless popular or liked in a group environment. This is an important factor for the introduction of wallaby meat as it would be a new product to China with which the market would be unfamiliar.
It was mentioned a number of times throughout the interview that a well-structured marketing plan would be essential for the introduction of a new type of food. An example that the executive chef mentioned was using a globally known celebrity such as Hugh Jackman as the face of wallaby meat in China. He believed this was an example of a celebrity who could potentially illustrate the health benefits of wallaby meat as he is famous for being in great physical shape and could perhaps relate his wellbeing to the consumption of wallaby meat. It would be important to highlight the health benefits of wallaby meat to capture the increasingly health conscious Chinese market. Another benefit in using an Australian celebrity would be the fact that China is becoming increasingly Westernised. An Australian celebrity could infer that wallaby meat is commonly eaten in Australia, countering the perception that it may be ‘strange’ or ‘peculiar’.

During the interview it became clear that the managers of the restaurant believed a lack of knowledge would be a significant barrier for the Chinese market. The chef suggested taking part in high-end cooking expositions and using celebrity chefs to gain consumer awareness of the product. Word-of-mouth advertising might then generate further interest and Chinese consumers may, slowly, be more likely to purchase the product. The chef made a clear statement that “the wallaby meat dishes must be prepared in a Chinese style in order to attract and obtain the Chinese market”. This would result in some product familiarity with Chinese consumers.

The chef and manager of the restaurant both made it clear that they believed mass-marketing would be highly ineffective. They suggested specifically targeting high-end restaurants and hotel chains in modern and Westernised cities of China (e.g. Shanghai). They also agreed that the market for wallaby meat would likely be high-income earners who value expensive and upmarket dining. Additionally, special events such as weddings could be a possible market for the meat as weddings in China are highly lavish. Australian abalone has been successful at penetrating the Chinese market which the manager believed was due to the product often being associated with weddings.

Another important factor was the importance of using the Chinese language in all the packaging of the product. As many chefs and consumers may have never tried wallaby meat before, it would be critical to use a relevant language to directly communicate with them. The chef interviewed specifically mentioned products he had received to test for implementation that did not have the instructions in his native language. As a result, he could not use the product. This would be critical for the ‘everyday’ consumer of the product as well as high-end chefs who need clear and concise instructions with regard to preparation and cooking the wallaby meat, especially in the early stages.

**Market challenges**

As noted, both the chef and manager unanimously agreed that the biggest marketing challenge to overcome would be the psychological factor behind eating an animal like a wallaby. They believed that the average Chinese consumer would look upon the animal as being cute and not something to be eaten. There would also be the challenge of supplying high quantities of meat for the large Chinese market. Selling to only high-end restaurants may solve this issue. However, the chef commented on Canadian beef which the hotel had carried for only a short time as suppliers could not keep up with the demand from the Chinese market.

**Key findings – summary across all interviews**

The following section integrates the results of the qualitative interviews conducted in Shanghai with interpretive comments provided by the Chinese interview team to provide a summary of the issues that would face the development of a market for wallaby meat in the Shanghai region.
**Product familiarity**
The majority of the interviewees had never tasted kangaroo or wallaby, nor cooked with them before. The manager from the Australian foods restaurant and the chef from a major hotel chain in Shanghai were the only two exceptions. The Australian foods restaurant offers kangaroo meatballs on their menu at the price of CNY88 (AUD18). It was said to be a popular dish along with crocodile skewers, emu steak and Australian oysters. In terms of cooking, neither of the managers were aware of the difference between kangaroo and wallaby meat and how the taste may differ between the two. Both managers also believed that most Chinese consumers would probably be unaware of what a wallaby was but if it was explained as being a small kangaroo, most consumers would not see it as a source of food.

**Carcass versus pre-prepared meat**
Each interviewee’s preference for whole carcass versus pre-prepared meat varied. Most Chinese restaurants in the survey showed a greater interest in buying the meat fresh and without any processing. The unique styles of Chinese cuisine often require the chef to be able to process the whole carcass of chicken, duck and goose. Red meat also comes in bulk since many large Chinese restaurants still have a kitchen brigade similar to traditional French restaurants. This means many restaurants have a butcher in the kitchen to process large quarters of beef and pork. All Western restaurants interviewed preferred to buy boned and filleted meat that was ready to cook. There were three main reasons as to why such restaurants chose semi-processed meats, including: convenience and efficiency, ability to maintain a relationship with quality suppliers and, most importantly, the safety and quality assurance that comes from processed meat suppliers. The perceived benefits of buying whole carcasses for chefs in the Chinese restaurants was the perceived freshness, the ability for chefs to directly judge the quality of the meat and for chefs to be able to make full use of the carcass. All respondents stated that the decision over whether to buy whole carcasses or processed meat depended on the variety of dishes, styles of cooking the meat and the cost difference between the two options. In other animals, sometimes whole carcasses are cheaper, with this also being more efficient and allowing the chef to make the best use out of the carcass to produce more dishes. For a medium sized animal like the wallaby, some respondents said they would be willing to try the whole carcass but this depended upon whether they could use parts of the animal such as bones to create dishes. Since the majority of managers had never cooked or eaten wallaby meat before it was difficult for them to make a conclusive decision.

**Choice of suppliers**
As shown in Figure 1 (below), more than 50 per cent of restaurants preferred Chinese wholesalers, with an emphasis towards using local wholesalers over imported meat wholesalers. This is because of convenience, with many restaurants not holding an import licence. Approximately one third of the restaurants preferred international suppliers due to the perceived quality. Restaurants choosing international suppliers expect an assurance of excellent taste with professional packaging of meat also required.
Some of the managers interviewed said that their restaurant had no previous experience with buying imported meat products. Of the restaurants that had previously bought imported meats, the problems they experienced were centered on the quality and consistency of the product. 57 per cent of restaurants whom experienced problems asked for a return on the goods whilst 29 per cent of restaurants sought to change suppliers and 14 per cent asked for not only a return on the goods but also sought to punish the suppliers through reputational damage. Of the eight restaurants to give information regarding their ordering cycle for purchasing imported meat, three of them responded with once a week, one ordering every two to three days and another restaurant ordering twice per month; conditions surrounding ordering for the other three restaurants depended on sales.

**Purchasing volume**

Of the interviewees who had knowledge of their restaurant’s purchasing volumes, all made it clear that the volumes ordered would fluctuate. The key variables influencing this fluctuation was market feedback, customer orders and the processes involved with processing and serving the meat. Some of the managers stated that in order to keep their produce as fresh as possible, the purchase of meat was only made once customers had made reservations. Hence, purchasing volume for these restaurants is highly dependent upon customer numbers. As shown in Figure 2 (below), 65 per cent of restaurants chose to store meat by freezing whilst 6 per cent of the restaurants purchased their meat daily.
The time period for meat storage appeared to differ between seasons. Of the six restaurants who responded to questions regarding length of meat storage, two claimed to store their meat for approximately two weeks. Another two restaurants chose to store meats for two to three days and the other two stored meat for one day. While most of the restaurants appear to have uncertain time periods for meat storage they do appear to prefer shorter time periods in order to keep produce fresh.

When introducing new meat products into their restaurant, respondents agreed that the most important thing was whether the quality was safe and reliable. All restaurants placed their primary concerns upon having this information, along with the features and benefits of the wallaby meat. Being environmentally sustainable as well as considering safe procurement of the wallaby were also of concern. The meat must also gain acceptance by the Food and Drug Administration of China. When learning about wallaby meat features and benefits, most of the restaurants were focused upon the nutritional content and the techniques involved with cooking the meat correctly. Some of the managers believed the taste to not be as crucial as the cooking methods, as they could change or alter the flavour to be more appealing to Chinese consumers.

Restaurants required a good understanding of the basic information surrounding new products before they would consider adoption. Chefs needed to know the handling and preparation methods of the produce so that they could add the restaurant’s features to the traditional methods of cooking and produce better dishes. Restaurants would also benefit from knowing potential recipes or styles of cuisine, showcasing the ways in which the restaurant could sell the product. Additionally, some kind of tasting would be important to eliminate differences in expectations and reality. Restaurants would also need to be assured that there was a sustainable procurement practice for meat products, to provide a stable long-term supply to meet demands.

Willingness of Chinese customers

According to the research, most customers show a willingness to try new foods, even when they are unaware of the animal. From this it can be seen that the acceptance of Chinese customers to try new varieties of food is favorable. However, managers interviewed proposed several concerns about wallaby meat and its introduction into the Chinese market. First, the wallaby meat must be fresh and meet safety standards. The managers clarified that the meat must offer some sort of benefit to justify attempting to introduce the product into the Chinese market. With regard to this, they were pleasantly surprised that wallaby meat has many elements that are nutritious to the human body. All the restaurant managers believed that there should also be some promotion to help build the awareness of the wallaby meat to customers. It was also mentioned that the price should match the product and could not be too high. These elements would all help to ease entry barriers and acceptance of wallaby meat into the Chinese market.

An increasing number of participants perceived the younger generations as having more open ideas and a greater acceptance of new products. They were perceived as less likely to boycott new varieties of food, instead opting to try new food and share the food with friends. Additionally, more than half of the Chinese respondents said that recommendations from family members, friends and colleagues were important for them to find new products for consumption. Other participants believed that television and internet advertising was the first channel to make them aware of new varieties of food. Few respondents believe that food programs played on television and the use of ‘Public Comment’ would be the motivation for them to know and try new food.
**Differences between kangaroo and wallaby**

The research found that Chinese customers who had only seen kangaroos at zoos did not have much knowledge about kangaroo meat. Whilst some customers were aware of kangaroo meat from information received by foreign restaurants, it was generally thought that consumers who had not tried kangaroo meat would consider kangaroo as being a cute creature, unfit for consumption. Alternatively, according to the Chinese research team, when asked about the kangaroo Asian people often generate words such as big, strong and aggressive; considering it the representative animal of Australia. Thus, they would be unlikely to consider eating it.

In terms of the perceived differences between kangaroo and wallaby, all participants had little knowledge about the difference between the animals. Based on the lack of knowledge, combined with their perception of the animal as being more cute than the kangaroo (and, perhaps, therefore, not fit for human consumption), attempts would need to be made to educate markets, aiming to communicate to the customers the difference between kangaroo and wallaby meat and the overall benefits of wallaby meat consumption. This opened a discussion with regard to translation.

In terms of translation, wallaby, in meaning, is 'little kangaroo', even though it is not a small kangaroo. The translation of Kangaroo is Dai(袋) Shu(鼠); Dai(袋) means marsupial (pouched) mammal or Potoroidae, Shu(鼠) means mice and rats (rodents). There is no evidence to show why the original translation of 'kangaroo' relates to rats/mice. However, the translation of the word kangaroo into an association with rodents has negatively influenced its potential marketing and consumer acceptance.

An expanded explanation from the Chinese researchers revealed that whilst some might suggest transliteration from the English when considering translation into Mandarin, it is not common to use transliteration for animals. As an animal, a name based on transliteration pronunciation makes no sense and would potentially confuse the Chinese market. Thus, it was recommended that wallaby be translated as ‘Australian Bush Rabbit’ to avoid reference to kangaroo and, therefore, an association with rodents. As such, King Island Wallaby, would be translated into Chinese as Guo Wang(国王) Dao(岛) Xiao(小) Tai(袋) Tu(兔). ‘Guo Wang’ means King, ‘Dao’ means Island, ‘Xiao’ means Little, ‘Tai’ means marsupial mammal or Potoroidae and ‘Tu’ means Rabbit. In avoiding the marketing issues that kangaroo has been faced with by its association to rodents, launching wallaby as a ‘rabbit’ (even though it is not a rabbit) would likely afford it a greater chance of consumer acceptance, especially as the Chinese have a long tradition of eating rabbit and consider it a delicious game meat.

**Attitude towards pricing**

As Figure 3 (below) illustrates, only one of the five Chinese restaurants included in the research perceived price as not being the most important factor, with customers willing to pay for novelty value. Two of the hotels and two of the Western restaurants also agreed that price was not the most important factor.
Based on a comparison of premium Australian beef in the Chinese market, the Chinese-based research team concluded that a realistic market price range would be between AUD25 and AUD50 per kilogram (e.g. AUD20 for steaks/cutlets, AUD40 for fillets). The price range was determined by using a reference pricing method from benchmarking Australian imported beef. Beef was deemed a suitable comparison product based on the premise that, in terms of perceived taste and nutrition, beef was a likely substitute for wallaby meat when consumers were selecting from the menu (see Appendix E for a comparison of beef prices in China). The pricing strategy when entering the Chinese market would need to consider the price of wallaby relative to beef.

As previously considered, there was discussion with participants as to whether meat was preferred as a whole carcass or whether processed and packaged meat should be supplied. In terms of price, it was proposed by the research team that, if the wallaby was supplied as a whole carcass, the price should be approximately AUD10 per kilogram. This was benchmarked against Chinese Inner-Mongolia Lamb (weighs 25kg) which retailed at CNY40 per kilo and CNY1000 for a whole live sheep. The sheep can be used as reference as it is about the same weight as the Bennetts wallaby. In this case, the wallaby carcass price should be as low as AUD9 per kilogram.

However, based on the discussion of research participants, it appeared that it would be preferable to supply processed and packaged steaks/cutlets and fillets as (a) Chinese chefs likely have no sense of how to butcher a whole wallaby carcass, (b) cold chain logistic and quarantine complexities are far less with vacuum packaged meat and (c) it is unlikely that a new market would be able to utilise the whole carcass on the menu, resulting in significant wastage. Thus, pricing for fillets and steaks/cutlets would be considered more appropriate.

**Market challenges**

It was evident that Chinese consumers have a very low understanding of wallaby meat, resulting in them potentially being reluctant to try the product. Moreover, in China, people perceive wallaby as a kind of wild animal under protection. When ordering wallaby meat, they may feel guilty and worry about whether their consumption is breaking any ethical obligations. In order to open up the domestic market in China, it would be necessary for customers to understand the product and its benefits.
The lack of popularity and demand may significantly hinder wallaby meat entering the restaurant market. Most consumers are not aware of the existence of wallaby at all and do not understand the concept and meaning of wallaby meat. Consumers would need time to accept the new product. Furthermore, expensive prices may prevent consumers from tasting the meat and, therefore, price may lead to the loss of potential customers. In addition, regulations from the Chinese government may present challenges for the importation of meat.

The marketing channel is also a challenge; people who want to sell wallaby meat into China must be able to guarantee supply and quality. A significant challenge may also include the taste factor of the meat for Chinese consumers. Customers could be asked to take part in a blind tasting which could compare wallaby meat to beef. The success of new types of products such as Kobe beef, which is popular in China now, is fundamentally a result of its successful brand image in Japan, a lesson which may prove valuable to wallaby marketers (see Appendix E for a summary of retail prices of beef and kangaroo meat in China).

During the interview it became clear that most of the male managers showed greater interest in the wallaby meat than their younger, female counterparts. It appeared the male managers were generally more confident about offering wallaby meat on their menu, whilst two out of three of the female managers were skeptical about the viability of the project in China. They both remarked that their first impression about wallaby or kangaroo was its tourism image and never thought that wallaby was an animal to be consumed.

**Interpretative comment and recommendations from the Chinese market research team**

**Readiness of Chinese customers for wallaby**

The Chinese market is open and promising, especially towards extravagant and status-based products. In addition, China has a large demographic with a high-income level. Thus, many residents within the Shanghai area can afford this level of high-end food. At present, Chinese consumers' pursuit of green and healthy foods is consistent with the nutritional benefits found in wallaby meat. From a cultural viewpoint, people from the south of China are more likely than northerners to accept wallaby meat as a source of food. It is also common in China for customers to choose the dishes they wish to eat via internet search engines and following up with reading consumer reviews. People may also listen to the waiters' advice when choosing food, so the restaurant propaganda and services may significantly influence the acceptance of wallaby meat to consumers. Of course, taste is a very important part of influencing consumers into recurring purchase of the meat and must be implemented to fit in with local preferences.

**Factors influencing choices of Chinese customers**

Chinese consumers are inclined to focus on the price, nutritional value and safety of the food. If the price is high, some consumers cannot afford it and then they will tend not to try the new food product. The higher the nutritional value, the more likely Chinese people will be to try the new product. Furthermore, the taste of the food and the standard of the restaurant are also factors that Chinese consumers take into account when deciding what they want to eat. Moreover, for different Chinese segments, they will try new food out of curiosity. Competitive price is another factor that should not be ignored. People are more likely to spend CNY500 (AUD104) on steak in a steak house rather than a five-star restaurant as consumers consider the price of a steak in a steak house restaurant to be more competitive than in five-star restaurants.
**Recommended branding strategies for King Island wallaby**

Based on the qualitative research conducted in Shanghai and the insight of the Chinese research team, the following brand attributes were identified as important for building an identity for King Island wallaby in the Chinese market:

1. Provenance: Australia
2. Health: Target at males and professionals – zinc and hormone - male wellbeing
3. Premium game meat, wild, organic, pasture-fed
4. Avoid cute image: need to educate, target at men

Suggested ways of successfully promoting these attributes were: a promotional website, co-branding and through strong trade partnerships with key distributors and intermediaries.

**A promotional website**

The establishment of a promotional website to publicise both the image of King Island and King Island wallaby meat would be recommended. It may be useful to include on the website photographs of King Island, evaluations from travelers to establish it as a tourism destination, information about the nutrition of wallaby meat and news about the excessive populations of wallaby in Australia, leading to an imbalance in the delicate ecosystem. Applications such as Wechat, Weibo and Dazhongdianping, which many young people use, might also be beneficial in the advertising and marketing strategy.

Photos of King Island could include the beautiful natural scenery as well as scenes of the leisurely and comfortable living environment for locals. These images would help to establish a mental image that King Island is one of few non-polluted places in the Asian Pacific; a promotional strategy that may attract a variety of Chinese people actively pursuing a healthy life style. To capture the increasingly health-conscious middle-class of China, it would be essential that the website clearly communicates the nutrition and health attributes of wallaby meat. Labelling the sources of these reports would be particularly important to demonstrate their credibility.

Information with regard to the excessive numbers of wallaby on King Island and the heavily regulated nature of the harvest process may alleviate concerns of consumers who may consider that it would be illegal to hunt wallabies because of their view of killing wild animals in China. Therefore, in order to change this pre-conceived mindset it would be critical to communicate the regular news with regard to the excessive propagation of wallaby in Australia; leading to an imbalance of the ecosystem with legal hunting of wallabies being entirely necessary to remedy the situation. This may become one of the most important steps to expand the wallaby meat market in China.

**Cooperation with trade partners**

As wallaby meat has not been sold in the Chinese market to date, it is a completely unknown product to the Chinese people. In order to develop awareness of the product and brand, cooperation with well-known retailers (such as Carrefour and Wal-Mart) might be beneficial. Due to the health benefits associated with the consumption of the meat (which is particularly attractive to the Chinese male market), association with such retailers (which target male markets) is critical to establishing the brand and expanding awareness. In addition, chain fitness clubs and some bars where there are a large number of men would also be good choices as participants of fitness clubs are typically after a high protein meal or supplement after a workout. In terms of cooperation, it
might also be a beneficial strategy to carry out brand promotion in bars where there are a lot of men. Males who attend bars in China typically have more enthusiasm to try new products and services under the influence of alcohol. Through word-of-mouth advertising, wallaby meat may become a mainstream product in the future.

Co-branding with a famous up-market hotel
Carrying out co-branding with a famous high-level hotel or restaurant might also be a beneficial strategy. For example, Shangri-La, one of the five-star hotels, who have set up sub branches in first-tier cities throughout China and employ chefs with excellent skills, is very famous in China. If they carried out co-branding with wallaby meat, a win-win situation might be established. Such restaurants launch new products regularly and also try to use more novel ingredients for cooking as a form of differentiation. Wallaby meat perhaps provides such an opportunity as the meat is organic, without pollution and has high-protein, high zinc and high vitamin content. As a result, when carrying out a co-branding strategy, it should be highlighted that wallaby meat is high-end, pure, organic, full of nutrition and legal to be eaten.

The value chain: barriers and estimated costs
As part of the value chain analysis, two of the UTAS research team members visited King Island in November 2014 to meet with stakeholders and inform the community about the project. This occurred via a public meeting and local newspaper articles. The visit enabled the team to collect consent and contact details from a group of representative beef producers, game meat harvesters, meat processors, exporters and council members who could be later interviewed for the project. Follow up telephone interviews with these stakeholders were conducted in November and December 2014. In total, nine stakeholder interviews were conducted with an average duration of 40 minutes each. Stakeholder identities were withheld for this report.

Within the sample there were representatives from the following stakeholder groups: beef producers, game meat processors, harvesters and shooters, game harvest and meat safety inspectors and auditors, King Island Council Branding Committee and on-island exporters. Interviewees were recruited in terms of their industry experience and knowledge of King Island beef farming, game meat harvesting, processing and logistics. With the permission of the participant, almost all interviews were audio recorded and subsequently transcribed. Due to the extent of information provided by interviewees, not all stakeholders who gave consent during the King Island visit needed to be interviewed. Desktop research of online reports, news articles, relevant websites and government sources was also conducted in order to collect additional data and verify information provided during the stakeholder interviews. Part of this secondary research involved members of the research team informally speaking with representatives of transport and logistics companies and businesses involved in game meat processing and sales.

Overview of the value chain concept
A value chain is defined as a particular type of supply and distribution arrangement whereby businesses share knowledge, values and market intelligence and engage in strategies that yield tangible benefit to each partner in the chain. Value chains are different from supply chains. In a traditional supply chain model, each business performs their role in the system independently and is rewarded for their efforts by receiving a certain margin or return on the product before it passes along the chain. Farmers, for example, are paid a certain price for their raw product from the processor, who then commences their product manufacturing processes relatively independently of the practices used on farm. In a value chain, the production processes and efforts are much more
coordinated, collaborative and responsive in nature (Bonney et al. 2007). The product is ‘pulled through the chain’ according to consumer needs and preferences, rather than pushed according to supplier inventories (Macharia, Collins and Sun 2013).

In theory, a value chain approach generates more ‘value’ for the end consumer, thus returning higher margins and profits to all involved in the supply, manufacturing, distribution and marketing of the product, rather than just those at the retail end. In food chains, value can be generated from efficiency gains resulting from close coordination among partners or higher prices earned from marketing differentiated food products that respond to consumer preferences and needs (Diamond et al. 2014). In the case of this project, increased value in King Island wallaby meat would result from a highly differentiated, premium branding strategy. Generally speaking, a supply/value chain comprises input suppliers, production (farming or manufacturing), transport and storage, wholesalers and agents, supermarkets and other retailers and consumers. Figure 4 (below) illustrates the typical participants within a food value chain.

**Figure 4** The stages in a typical food supply/value chain (Diamond et al 2014)

For the proposed King Island wallaby meat export chain (Figure 5, below), the stages would be different given it is wild game meat and not technically farmed. The chain would, typically, comprise: in-field/on-farm harvesting, transport to registered game meat processing facility, processing (e.g. skinning, boning, dressing) and storage, packaging suitable for export, transport off island, transport overseas, arrival in overseas market with an agent or distributor, who would then on-sell the wallaby to a food service outlet such as a high-end restaurant.

**Figure 5** A proposed value chain for King Island branded export wallaby meat
Value Chain Stages 1 and 2: Landholders and field harvesting for commercial use

At present, most King Island beef producers control the wallaby population by cull shooting in the field (on-farm) and many producers have combined this with wallaby-proof fencing around pasture (paddocks). Our stakeholder interviews revealed concerns that the Tasmanian government (Parks and Wildlife) currently do not support farmers to install wallaby-proof fencing on boundaries of State forest and Crown land. Farmers and landholders are expected to bear this cost themselves even though, in their opinion, much of the wallaby problem stems from the animals being able to take shelter in the Crown land/State forest and tree lines between paddocks. In addition, if the landholder does go out to shoot, the animals will often scurry back (flush away) into the native vegetation.

Wildlife management strategies for the landholder

According to the stakeholders interviewed, the ideal strategy for controlling the wallaby population was through a combination of wallaby-proof fencing and locally controlled shooting. Most shooting is carried out by the beef producer/landowner themselves. Some of the beef producers/landowners on King Island employ a professional shooter (who has a commercial wallaby licence). According to those interviewed, the most effective time to shoot wallaby is at night, using a spotlight and purpose-fit vehicle with hanging racks, cleaning facilities/water and off-road capabilities. Some expressed their concern that wallaby can be ‘gun shy’ and over time the animals will learn how to avoid areas that are regularly shot. This is one reason why shooting (culling) alone is not effective and alternative wildlife management strategies are necessary.

Wallaby-proof fencing is a widely used strategy for keeping wallaby out of pasture/cattle paddocks. This type of fencing is, however, relatively expensive (respondents estimate up to $10,000 per kilometre after the land is cleared and prepared) and difficult to implement where the pasture extends over rough or coastal terrain. To be effective, fencing must also be maintained. In coastal areas the fencing can corrode more quickly and wallabies can dig under fences, thus making their way through to the pasture being protected. Some beef producers have also encountered issues with wallaby proof fencing being ineffective when their land contains wind protection channels (shelter belts) or nature reserves. Fencing is also difficult on coastal terrain as it is considered to be more ‘fragile’ to damage, especially if creeks, streams, roads, shelter belts run through the property. Installing fences on coastal country can also create problems with soil erosion. Some stakeholders shared their concern that this could create more damage than wallabies actually grazing on pasture.

Biodiversity issues on the farm/land

During interviews, some stakeholders also raised the issue of biodiversity and discussed how an increasing wallaby population could damage the natural environment, threatening plant species such as the native and endangered orchid. In some areas, it is understood that native species, particularly trees, have been wiped out due to wallaby grazing. Trial pads placed over native vegetation demonstrate that wallaby grazing is also seriously confounding pasture growth and that they consume more than just native grasses. In coastal areas where wallaby are less likely to be culled due to difficult terrain and some reluctance on farmers’ part to allow shooting on their property, there is concern for the potential damage wallabies will do to natural habitat. Grazing damage can result in the creation of more sand dunes/banks, less pasture and more scrub. In coastal areas where there is less fertile ground and no wallaby proof-fences, the animals can travel inland to pasture areas. Not controlling the population effectively in coastal areas may be creating additional problems for farmers and landowners inland.
Type and size of wallaby preferred for human consumption

According to the stakeholders interviewed, the ideal wallaby for eating would be a half size to three quarter grown animal (12-18 months old; 12-13kgs in weight) and only be the Bennetts wallaby species. Some stakeholders were more specific in that they felt young females were the best eating, particularly those that haven’t had too many joeys. Some individuals and groups may consider it inhumane/unethical to take only females. Macro Meats, for example, Australia’s leading manufacturer of kangaroo meat have had a policy to only cull male kangaroos since 2012 (Macro Meats 2015).

Species: Bennetts compared to Rufous

Pademelon (Thylogale billardieri or Rufous) wallaby are not preferred for human consumption because they are a much smaller animal. They tend to prefer the security of thick scrub and denser bushland and hence this diet is presumed to make a difference to the eating quality and size of the animal. Bennetts wallaby are mostly found in pasture areas where at night they graze on grass and herbs and shelter in bushland during the day. According to the Parks and Wildlife Service of Tasmania (2010), Bennetts wallaby can weigh more than 20kg and stand up to 1.5m tall. The species is largely solitary although loose groups, known as mobs, often share common feeding areas. In terms of the species of wallaby most preferred for game meat, these would be Bennetts sourced from inland pasture areas and not the coastal country of King Island. According to the stakeholders interviewed, coastal wallabies are lighter in weight, smaller and have less fat around their kidneys due to their diet and behaviour. The lack of kidney fat and condition is what some stakeholders felt makes the coastal wallaby meat less appealing. It is possibly also not as moist. The wallaby currently sold on King Island in supermarkets and butchers is Bennetts harvested from inland pasture areas.

Potential Barrier: harvesting a particular size of wallaby ideal for game meat processing

In order to harvest the ideal size, age and type of wallaby for game meat processing for a premium export market, the professional shooter may need to bypass many animals that don’t meet certain criteria. This can make the night harvest less efficient (and potentially more costly) as more time is spent selecting the right animals rather than driving into an area and culling a whole herd of animals that range in size and condition. At present, the professional shooter on island charges a set price to shoot wallaby for commercial use/domestic meat consumption. This price has remained the same over the last few years. The cost would need to be recalculated for harvest to particular selective criteria that would ensure the consistent supply of high quality meat for an ultra-premium export market.

Potential Barrier: maintaining consistent supply of wallaby for human consumption

Ideally the market will require a consistent supply of the same type and size animal so that the product meets taste and quality specifications. Processors also like to harvest the same size animals so that the amount of meat and size of different cuts are consistent. If a wild harvest export wallaby supply chain is to be established, ongoing supply of a consistent size and type of animal will be important. This could be an issue with a wild, native animal that cannot be farmed. Some stakeholders suggested that because the best animal for human consumption is not too big and not too small, it may be difficult to get enough to sustain a supply into the Asian market. Although the population are in excess, many of these animals would be too small for processing. Some believe the prominence of small animals may be related to the growing population and the competition for feed, which keeps them small and not growing as large or as quickly. Others commented that there
are many ‘young’ and small ones about because they are the ones that are not yet ‘gun shy’ or not yet aware of how to find shelter.

Some stakeholders were worried that commercial harvesting over a period of time could substantially reduce the numbers in the wild resulting in a disruption to supply. In Tasmania, the number and distribution of Bennett's wallaby have expanded over the past 30 years. On King Island specifically, in 2008 the King Island Natural Resource Management Group estimated there were between 440,000 and 535,000 Bennett's wallaby foraging in pasture on King Island (Branson 2008). According to the most recent spotlight summary report published by the Tasmanian Wildlife Management Branch (WMB) (2014), King Island recorded an increase in the density of Bennett's wallaby; with 98.3 animals per km² in 2013, which was the highest recorded density of any Tasmanian region (Figure 6, below).

**Figure 6** King Island Bennett's wallaby population (Wildlife Management Branch 2014)

The Department of the Environment sets commercial and non-commercial wallaby harvest quotas for Tasmania. The most recent statistics for King Island for 2009-10 state the commercial quota for King Island was 10,000; non-commercial 23,000 with a maximum harvest of 33,000 (DOE 2010b). Although there is an overpopulation issue at present, some stakeholders believe that sustained commercial harvesting on a larger scale might only be viable for 2-3 years as, after this point, the population is likely to be back at a more sustainable level. A decreased volume of supply could be an issue if an export chain was established but in several years the operators encounter issues sourcing from King Island in accordance with a wild harvest method. A potential solution to this problem would be to also source/harvest wallaby from different regions of Tasmania such as mainland Tasmania and Flinders Island. Where the supply of wallaby comes from (i.e. either specifically King Island or Tasmania more broadly) is a factor requiring consideration in terms of the branding strategy.

Some stakeholders also felt that wallabies – being a native, grazing animal which prefer to graze in herds – may become accustomed to commercial harvesting and professional shooting practice and
this may make them harder to shoot in numbers. For example, some stakeholders believe wallabies are sensitive to the noise of vehicles or less likely to localise themselves in exposed areas which are easy to shoot at night.

Potential Barriers: negative perception of commercial harvesting versus ‘farming’

Some stakeholders expressed concern that if parameters were placed regarding a certain size animal for commercial harvest (i.e. young wallabies of a certain size), the operation could be perceived as a farming operation which is not allowed for wild game meat. This may create tension in the community and for this reason several stakeholders suggested that some landowners and beef producers may not grant permission for commercial harvesting on their property (because they are wary of being involved in a ‘farming’ and commercial operation). A commercial wallaby harvesting operation also brings with it additional requirements and regulations that the landowners must also abide by, including quotas. For some stakeholders, there was concern that the extra regulations and requirements could impede on their normal beef/dairy farming activity and their ability to manage wildlife on their own properties.

Potential Barriers: harvesting inland during winter; limited access and unfavourable conditions

Some stakeholders suggested that during winter it may be difficult to commercially harvest from the inland areas due to high rainfall making paddocks difficult to drive over and the paddocks too ‘heavy’. To compensate for this, professional shooters could move to the coast as harvesting in this country is possible all year round. However, this terrain can be difficult to obtain necessary volumes of wallaby from due to limited grazing pasture and some stakeholders believed that coastal wallabies tend to be more ‘skittish’ and don’t tend to sit in the same position, thus making targeted shooting more difficult. In contrast, wallabies grazing on inland pastures tend to feel more comfortable in this terrain and tend to sit for longer, thus making targeted and efficient shooting easier. The ideal time for shooting inland is around March and April when the grass is fairly low and the professional harvester can identify the animals easily. In late spring the grass tends to be too long or high and thus harvesting becomes more difficult or less efficient. In addition, there was concern over the taste and texture of meat sourced from coastal areas, as previously mentioned.

Potential Barriers: gaining access to enough suitable properties

Another potential issue raised by stakeholders was that some properties have large numbers of small paddocks and shelter belts. Thus, the professional shooter has to spend inefficient time opening and closing gates, navigating between paddocks and finding good access. This all adds to time spent not shooting which may make a commercial field harvest operation on some parts of the island less economical. It also could potentially disrupt the wallabies grazing in the wild, making clear shots in open spaces more difficult. For this reason, the professional shooters would need reliable access to larger properties and landholdings that are more conducive to commercial harvesting (e.g. a 50 acre paddock). However, a downside is that this would limit the opportunities for all King Island farmers to obtain benefit from the potential export program and receive a return.

Potential Barrier: Supply of labour

Commercial harvesting of wallabies for the domestic meat market including shooting, handling and transport, must be carried out in accordance with the provisions of certain regulations and requires the shooter to be an accredited game meat harvester (TFGA 2015). The Australian Government controls the overseas trade in native wildlife which includes meat, skins and related products.
through the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999. Under this Commonwealth legislation, approvals to export kangaroo or wallaby products will only be granted if harvesting is ecologically sustainable and the animals are killed humanely with minimal pain and suffering. The controlling authority is the Australian Government Department of Agriculture. Products derived from commercially harvested wallabies may only be exported from Australia in accordance with a permit issued by the Department of Agriculture (TFGA 2015).

As per the DPIPWE regulations (DPIPWE 2015), a commercial wallaby hunters licence is required if the meat is to be sold into market for human consumption. This commercial licence authorises the licence holder to harvest “wallabies at night from a vehicle with the aid of a spotlight”. The landowner must also obtain a Crop Protection Permit and issue copies of this to the professional shooter. All holders of commercial licences to harvest wallaby are required to provide monthly returns of the number of wallabies taken (killed) and sold, to the Wildlife Management Branch of DPIPWE no later than the 14th of each month.

Stakeholder interviews suggested that there were four people currently living on King Island with a commercial wallaby harvesting licence. However, only one person was actively using their licence at present and their capacity to do more commercial harvesting/professional shooting was limited. Whilst there is likely to be a second person qualified in the near future, two professional shooters are still unlikely to be sufficient for an export wallaby meat chain. The obvious solution to this potential problem is to have more people obtain their commercial wallaby hunters licence. To do so, the professional shooter must apply to the DPIPWE Resource Management and Conservation, Wildlife Management Branch. They must hold a Certificate II in Meat Processing (Game Meat Hunters and Shooters) and pay an application fee of $58.40 (DPIPWE 2015) and annual renewal fees of approximately $75. The Certificate II in Meat Processing can be completed through a registered training organisation and costs approximately $1,300. Payment for shooting may entice some to enter this occupation. However, given its remote location, King Island may struggle to attract sufficient professional game shooters long-term.

In-field harvesting and field dressing

Ideally, the in-field harvesting process takes place at night and must be completed by a professional shooter themselves or with another person. One of the stakeholders interviewed suggested they preferred to shoot by themselves. If they did go with another person, they would only carry one gun in the vehicle for safety reasons. Professional game shooters/field harvesters are required to abide by the National Code of Practice for the Humane Shooting of Kangaroos and Wallabies 2000 and the Australian Standard for the Hygienic Production of Wild Game Meat for Human Consumption AS 4464:2007. Adherence to these codes and required practice is checked regularly and inspected by Food Safety auditors employed with the DPIPWE. These regulatory requirements ensure that professional shooters do not shoot if there is any doubt that they will not achieve a sudden and humane death by a single shot to the head; that no other animals are transported with wild game carcasses so to avoid cross contamination; only wild game animals fit for purpose of producing wild game meat for human consumption are harvested; and an accurate post-mortem disposition is applied to the wild animal carcasses.

Potential Barrier: harvesting capacity/physical ability of commercial shooter

A potential barrier to establishing a viable export chain is that professional shooters are limited in how many wallabies they can reasonably shoot in a night. In the field, the professional shoots the wallaby in the head, picks up the dead animal and then must hang, bleed and field dress the
Asian Export of Branded King Island Wallaby

wallaby without delay (CSIRO 2007). At the end of the shoot (and before daylight) the shooter will then transport the wallaby carcasses to a licenced game meat processing facility and help unload. After the wallaby arrive at the processing plant, they are skinned and then stored in a cool room. A ‘very good’ harvest would see 120 to 130 wallabies being taken per night. This yield involves substantial physical effort on the part of the shooter which they could not sustain for seven nights in a row. According to some of the stakeholders interviewed, a reasonable take would be 100 wallaby a night, for five nights a week, totalling a possible target of 500 a week. However, it is worth noting that professional shooting of wallaby on King Island would require the shooter to undergo training in identifying suitable animals and potential supervision from a more experienced shooter. Professional shooters would need to be oriented to the property and be familiar with the site so that they could identify any hazards and ensure their safety.

Potential Barrier: Timely transport to processing facility
After wallabies are harvested and partly dressed in the field, the shooter is then responsible for transporting the animal carcasses to a processing facility immediately (skin on). This is usually done before day break to prevent food safety issues such as the meat being affected by rising day-time temperatures and attracting insects. If a larger operation was to be established, there may be issues in terms of transporting the carcasses to a processing plant within a short time period, particularly if the plant was not located on island. In this case the carcasses would need to be loaded in a cool container in the field and then this used to transport the carcasses (skin on) to the processing facility while maintaining a consistent cool temperature during transport.

Value Chain Stage 3: Game meat processing
Abattoirs are either licenced to produce meat for the domestic market only or for domestic and export markets. In order to produce and export game meat, processors would need to first apply for export registration and then secondly agree on the certification requirements with the importing country. Export registration with the Australian Government determines whether the plant/facility meets all legislative requirements relating to its construction, equipment, operating procedures and administration.

Some of the stakeholders interviewed suggested that, ideally, the meat processing plant would need to have a separate skinning room, boning room, receivable room and packing room to facilitate the butchering. The only premises that process wallaby on King Island at present have two people performing this task. They process a limited number of wallaby per week (30 to 40) and this is sold to local consumers, predominantly via the IGA supermarket in Currie. If this processor focused solely on wallaby, they could increase their capacity to around 200 wallaby per week, over three nights. This is still unlikely to meet the needs of a commercial export wallaby meat chain. The ideal processing capacity is of course a function of market requirements and demand for the product. However, with current wallaby population numbers on King Island being estimated in the range of 400,000 to 535,000, a processing capacity of up to 100,000 wallaby per annum could initially be needed. This, at 40 weeks of five days processing per year, would require a processing plant to achieve at least a throughput of 500 wallaby per day.

Potential Barrier: Regulations for export plants (Tier 1 versus Tier 2)
All meat exported from an Australian establishment must comply with the Australian Standard for the Hygienic Production of Wild Game Meat for Human Consumption AS4464: 2007 and the Meat Hygiene Act 1985 and Meat Hygiene Regulations 2013, regardless of whether the processing facility has had to adhere to Australian Government Department of Agriculture standards or those
enforced by the State Government in that territory (Bleby 2013). Since 2003, Australian meat processors selling to the domestic market have been able to also seek registration to allow them to export meat and meat products to applicable markets. The first category in this arrangement, referred to as Tier 1, recognises that some overseas export markets accept product prepared in accordance with the relevant Australian Standards (for wallaby this would be AS 4464:2007 Hygienic Production of Wild Game Meat for Human Consumption (CSIRO 2007) and Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption (AS4696). These standards require that a suitably qualified meat safety inspector performs post-mortem inspection and makes decisions on each carcass and its carcass parts (any tissue or structure removed from a carcass and includes head, viscera and blood). While the processing facility has to be approved for export by a federal authority, it is controlled and audited by a State Regulatory Authority (e.g. Tasmanian Department of Primary Industries, Parks, Water and Environment) (Department of Agriculture 2014). In terms of Asian markets, there are few in the Tier 1 category. Those that are Tier 1 include: Indonesia, East Timor (Timor-Leste) and Vietnam (see Appendix G).

Most Asian markets, including China, fall into another category of countries that have more stringent requirements for meat processing and higher levels of monitoring and inspection that differ from the Australian Standards. This higher level category of countries is referred to as Tier 2. Australia has around 65 Tier 2 processors who are certified to export meat to highly regulated export markets such as the US, UK and Japan (Bleby 2013). Tier 2 processing facilities are governed and regulated by the Australian federal government through the Department of Agriculture and not the respective State Regulatory Authority. They are typically larger facilities and able to process a range of meat products. Tier 2 facilities are required to institute and manage an approved processing arrangement which is audited daily by on-site AQIS (now Department of Agriculture) meat inspection staff, under the supervision of an AQIS veterinarian (Felix Domus 2013).

Desktop research revealed some debate surrounding the Tier 1 and Tier 2 system. Many Tier 1 processors argue that Tier 2 operators are more focused and governed by the destination (country to country) market requirements rather than the relevant Australian standards. In response, the Chairman of the Australian Meat Industry Council suggested that the Tier 1 and Tier 2 system is more about the differing levels of supervision required by overseas markets (Bleby 2013). In Australia there is only a relatively small group of Tier 1 abattoirs (approximately 15 in 2013); registered to export meat to countries such as Egypt, Indonesia, Papua New Guinea, Jordan and the United Arab of Emirates (Bleby 2013). Although there is no published list of Tier 2 countries, interviews with key stakeholders confirmed that markets such as China, United States, Russia and Saudi Arabia fall into this category.

According to our stakeholder interviews, obtaining Tier 2 export registration is a much more costly (and complex) exercise due to the additional supervision requirements posed by the Tier 2 importing country, the most notable being the requirement to have an DAFF/AQIS government veterinarian on site and a food safety meat inspectors on each production line. As per version 10 of the Australian Export Meat Inspection System (AEMIS) an Australian Government Department of Agriculture veterinarian is responsible for ante-mortem inspection and verification of post-mortem inspection and processor hygiene practices. Post-mortem inspection is delivered either by department officials called Food Safety Meat Assessors (FSMAs) or Australian Government Authorised Officers (AAOs). The latter are employed by the establishment or by an independent AAO employer, to satisfy importing market requirements for Australian Government health certification. AAOs are bound to the department through a 'Deed of Obligations', have appropriate
qualifications and must be assessed as capable prior to being appointed to the position of an Australian Government Authorised Officer.

Under AEMIS, meat safety inspectors (AAOs and FSMAs) performing post-mortem duties must have a MTM30307/MTM30311 Certificate III in Meat Processing (Meat Safety) qualification and attain a MTM 40211 Certificate IV Meat Processing (Meat Safety) qualification within 12 months of appointment. Training may be a barrier given the requirements for an export processing plant to have someone with a Certificate IV. To get a MTM40211 Certificate IV in Meat Processing (Meat Safety) (see www.training.gov.au) students must have a total of 28 units within a 12 month period. 16 of these units are core units and the remaining 12 are electives. Some of the stakeholders interviewed felt that the number of units in Cert IV was unreasonable and many of the elective units would be impossible for Tasmanian/King Island worker to complete given the strict time frame and nature of some units. For example, a unit such as ‘Implement a Meat Hygiene Assessment Program’ would only be possible if the individual was currently working in a meat processing facility where this was taking place.

Some of the stakeholders interviewed believed it would be very difficult for anyone on King Island to obtain this required Certificate IV qualification. Their understanding was that there are currently some people on the island (estimates are three) with a Certificate III in Meat Processing (Meat Safety) but to obtain the Certificate IV was a significant ‘step-up’. Moreover there are no Registered Training Organisations in Tasmania currently offering this course. According to the MySkills.gov.au website, there are two confirmed training providers: Symbio Alliance in QLD and TAFE NSW. Some stakeholders also commented that, to their knowledge, there were currently no Certificate IV qualified meat inspectors in Tasmania. AQIS has recently undergone some organisational changes and, as a result, all their AQIS meat inspectors will now be automatically given a Cert III in Meat Processing. They will be expected to complete their Certificate IV within 12 months.

Another stakeholder interviewed commented that not having an RTO located on the island was an issue in terms of being able to provide continuity of training programs. In most cases, people travel off island or have people come to the island to carry out training. Due to its remote location and small population, requesting trainers to come to King Island is a barrier due to the cost and time it takes to generate enough students to undertake the training. Thus, in most cases the Island sends people back to mainland Tasmania or mainland Australia to undertake training, or attempts to have someone on the Island trained to be a registered trainer themselves. Even if there was an RTO on King Island it is unlikely that they could be registered to deliver the Certificate IV meat processing qualification that is required by Australian Government inspectors and food safety meat assessors.

In addition to the regulation requirements, Tier 2 registration bears significant cost in terms of salaries and facilities. The annual salary paid to an AQIS vet can be upwards of $180,000 a year in annual salary, excluding on-costs and amenities. The veterinary officer and their on-line meat safety inspector must also have their own office and amenities (e.g. shower, toilets, laundry, lunchrooms) in the plant, which are separate from other workers. Stakeholders interviewed for this project estimated that the total employment costs for the on-line meat inspector were around $150,000 per annum and $300,000 for the approved veterinary officer. Any overtime must be paid at an overtime rate (see Department of Agriculture for further details) which adds to the overall cost of employment. During interviews some stakeholders also suggested that additional inspections and audits may be required by the importing country adding further costs to maintaining registration.
In general, the purpose of meat inspections is to ensure that the meat contains no abnormalities and is fit for human consumption. Within the facility certified to export meat, it is also the inspector’s responsibility to verify that all meat destined for an overseas country complies with the requirements of that country. Tier 1 premises can use a domestic, Cert III qualified meat inspector, rather than a food safety meat inspector who is Cert IV qualified. Information recently obtained for the purposes of this project suggests there may be a part-time veterinarian already working on King Island who could fulfil the food safety, animal and meat inspection requirements of AQIS and Tier 2 countries. Further investigation would be required, as this may present a potential solution to the significant cost and training barriers identified above.

Other licencing and regulatory requirements

In addition to export registration, an export wallaby meat processing facility would need:

- **Meat Premises Licence** - In Tasmania meat premises and associated operations must apply for a Meat Premises Licence - Game through the DPIPWE and Biosecurity Tasmania (DPIPWE 2014).
- **Wildlife Trade Management Plan** (Department of Environment) for the State and species (e.g. Tasmania and wallaby), approved by the Australian Government environment minister and published in the Australian Government Gazette. If this is not in place, then the company must have an approved Wildlife Trade Operation (see below).
- **A Wildlife Trade Operation program approved** – necessary when exporting native species (meat, skin or fur) overseas for commercial purposes.
- **Export permit from Department of the Environment, Water, Heritage and the Arts (DEWHA)**
- **All exports of native specimens for commercial purposes require an export permit from DEWHA. However, you do not need to apply for separate approval of your wildlife trade operation if the species are currently covered by a State/Territory or Commonwealth plan approved as a Wildlife Trade Operation or a Wildlife Trade Management Plan. In these cases, the exporter must provide a copy of the relevant State/Territory or Commonwealth licence when applying for an export permit from DEWHA.**
- **Once built and established the facility would need to be inspected by Department of Agriculture (formerly AQIS) and a licence to export to certain countries granted. This could take up to three months (Felix Domus 2013).**
- **Aus-Meat Accreditation in accordance with the Australian Meat and Live-stock Industry Act 1997 which incorporates quality management systems and measures for maintaining the reputation and quality of Australian export meat products, needs to be in first 12 months of operation (Felix Domus 2013). This accreditation is optional for domestic plants.**
- **A system (inventory control, segregation, identification, use and control of official stamps) that ensures that only product eligible for a particular market is exported to that market.**
- **Possibly a Food Safety Program, certified according to HACCP regulations.**
- **Maintenance of the integrity of product in export containers through security of the containers with official government seals applied after loading.**

Potential Barrier: Establishing a specialist game meat processing versus a multi species facility

Some stakeholders interviewed felt it would be wise to establish the game meat processing plant as a separate facility rather than a multi-species abattoir as the latter would need to adhere to additional regulations and requirements for sheep, cattle and possibly other specific regulations for other game meat. Under the Australian Meat and Live-stock Industry Act 1997 a meat export
licence is required if edible meat/meat products of cattle, sheep or goats are to be exported. However, a meat export licence is not required for meat from other species (i.e. wallaby). However, it is mandatory to purchase these products from a registered establishment and comply with the Export Control Act 1982 and Food Safety requirements (e.g. Meat Hygiene Act 1985).

Registering a plant for cattle and sheep production also requires additional facilities and infrastructure such as unloading facilities and holding yards; all adding to the complexity and capital costs to establish. At present there are no domestic licenced processing facilities on King Island that would be able to meet the requirements of a Tier 2 export market. A whole new facility would need to be established carrying with it substantial capital costs for the building and infrastructure and potentially creating some divide among the community, particular with reference to the sensitive nature of the current King Island Multi Species Abattoir (KIMSA) proposal. Access to the plant would also be scrutinised by authorities such as AQIS (Department of Agriculture). As one stakeholder commented “it’s no good having the facility two mile up a dirt track because AQIS will jump on that”.

Potential cost: registration charges

In accordance with the AEMIS, the registered game meat processing plant for export wallaby would need to pay a monthly Registration Charge of $840. This is applied by the Department of Agriculture to recover the cost of the general regulation, management and administration of the AEMIS. A throughput charge is also applicable and equates to $0.70 per cattle equivalent. At present there is no separate conversion category for wallaby to calculate the cattle equivalent throughput charge. However, as per the Department’s website, a kangaroo is charged at $0.05 per head and a rabbit, possum or hare is $0.02 per head.

Potential Barrier: Not having anyone qualified, willing or able on-island to be the meat processor

Currently, the main butcher on King Island processing wallaby meat for human consumption is in his late 70s and does not have plans to grow his business. According to stakeholder interviews, one or two other people living on the island have their Certificate III in Game Meat Processing (Meat Safety). However, they are also not in a position to take on a new venture such as processing King Island wallaby meat for Chinese export.

A group of local producers have formed the King Island Multi Species Abattoir (KIMSA) group. KIMSA have recently (2013/14) purchased a site near Currie, where a processing facility was once built but only operated for a very short period of time. News reports state that the facility is “basically only a shell” (Ryan 2014). In July 2014, the chairman of the KIMSA reported that there were two potential operators for the new multi species abattoir but neither has yet committed (Twomey 2014). The group do not have plans to run the operation themselves but instead will be searching Australia for a suitable operator and are structuring themselves as a holding company. The KIMSA “will be a shareholding company that will be owned by the people of King Island…they will own the company and the assets” (Ryan 2014). If it gets commissioned the KIMSA will slaughter local cattle and other animals that are unshippable because they are not in the right condition or are too small (i.e. bobby/veal calves, lambs and wallabies).

If a processor on-island cannot be found or existing facilities cannot be developed, then the processing could possibly be done off-island either on mainland Australia (e.g. Melbourne) or mainland Tasmania. Greenham at Smithton is not a multi-species abattoir. JBS Tasmania has two plants: one in Devonport that produces beef, veal, pork and all sheep meats. The other, at Longford,
is also a multi-species processing facility but does not appear to currently be registered or licenced to produce game meat for Tier 2 Asian markets.

Processing wallaby off King Island for export markets also presents additional complexities in terms of transporting the carcasses. Using a portable in-field cool chamber/fridge would enable wallabies (skin-on) to be transported off island with chilled temperatures maintained. According to stakeholders interviewed, other individuals have recently trialled harvesting wallaby from King Island, field dressing the animal and then transporting the animals back to mainland Tasmania to complete the processing at their own processing plant. This has been relatively successful and has been shown to be able to be completed within three days which, according to some stakeholders interviewed, is the maximum time one should allow between the wallaby being shot in the field and skinned in a processing plant.

Cryovac vacuum packaging appears to be the most preferred option for packaging the wallaby meat after it has been processed, given the extended shelf life this method provides. According to stakeholders interviewed, the shelf life of vacuum packed wallaby meat is three (possibly four) weeks. Lenah Game Meats of Tasmania advertise on their website that all their meat is packed into 1kg vacuum bags to keep it fresh and has a shelf life of 8 weeks (fillets). Other research suggests that the shelf life of meat is seven-10 days for fresh meat or up to four months if the meat is boned out and kept chilled at around 4°C. The shelf life will be less if bones are left in, as when bone is cut it releases bone dust/enzymes and comes into contact with bacteria, which start the degradation process and are very temperature sensitive (Holco 2015). If this happens, it could taint the meat and affect the meat quality and, importantly, food safety. Once packaged, the meat must stay at a consistent cool temperature. This is the case regardless of the packaging method. Being in a cool chain creates additional costs and potential complexities with transport and logistics, especially long distances overseas. Such costs and processes would require further investigation.

Potential Cost/ Barrier: Suitable methods for disposing of waste product and effluent

Given the premium nature of the export chain, there is likely to be quite a lot of waste product after the primal cuts are taken off the animal (unless the animal is sent as a whole carcass). Disposing of the waste product must be in accordance with the Australian Standard AS 4464 - 2007 Hygienic Production of Wild Game Meat for Human Consumption.

Compared to other game meat such as kangaroo, the stakeholders interviewed estimated that around four to six kilograms of meat could be used from each wallaby. Thus, there is a large amount of animal left that is waste product, or needs to be dealt with by rendering. This could increase the per-animal processing cost, due to the smaller amount of meat output. Although some parts of the animal (i.e. gut) are disposed of in the field when they are eviscerated, the skin, bones and other internal organs would need to be disposed of by the processing plant. If the processing facility was multi-species, the operators would need suitable methods for other species as well. Other processors have previously sold the skin. However, the price per skin has dropped significantly in recent years. The KIMSA have indicated their plans to sell the skin as they suggest there is a good market for them domestically and that a certain leather goods customer has already expressed interest.

Meat processors must have approval in writing from their Local Council or the Environment Protection Authority Division of DPIWPE regarding their nominated methods of effluence and solid waste/offal disposal. According to some of the stakeholders interviewed, there are some issues and potential barriers with waste disposal on King Island. Some indicated that the ex-JBS abattoir had
issues with discharging effluent correctly. There were also issues raised in terms of the water supply on King Island and the need to have a reliable water source to dispose of liquid waste, wash down facilities and fill settling ponds. Due to these issues, some stakeholders suggested that having a rendering plant would be the only viable way of disposing of waste product. However, rendering plants tend to be expensive. If a commercial operation was to be established, the environmental protection authorities may also insist on the guts being disposed of and not being left in the field as they are currently allowed to be.

A positive factor is that compared with beef and lamb, stakeholders believed that wallaby was a more sustainable meat product to process. Because it produces less waste and offal compared with beef, this waste could be disposed of potentially at a lower cost. However, the processing plant would still need to comply with environmental and waste management regulations, for example, the need to dispose of waste product and skins. Waste disposal could be perceived as a biodiversity or environmental issue in the future. Currently, shot wallaby are left to decompose in the paddock. Whether this creates any hazard or risk to other animals or has any negative impact on surroundings would need further investigation. At present, most stakeholders interviewed agreed that the results of animals left in the field wasn’t pleasant. With regard to the impact this has on the physical environment, one stakeholder suggested that the dead wallaby carcasses actually feed the soil. Furthermore, harvesting more wallaby for commercial consumption/use could also reduce the number left to decompose in the paddock/field which would have a positive impact on the physical surroundings and image of the island.

**Value Chain Stage 4: Transport and logistics off King Island**

King Island is in a remote location and thus incurs additional processing and logistics costs in getting food and product to market. In addition, there can be challenges with shipping and air freight due to unforeseen weather events or conditions. There appear to be two options for transporting wallaby meat off the Island. Option 1 involves shipping across Bass Strait to mainland Tasmania. The Searoad Mersey vessel operates a triangular service leaving from the Port of Melbourne (on a Friday), calling into Devonport (on a Saturday) and then onto the Port of Grassy (on King Island; arrives Sunday). Searoad Transport sail vessels between Melbourne and Devonport six days a week; the Searoad Mersey calls at King Island once a week. The call at Grassy is on the Devonport-bound leg of the ship, which carries live animals to Devonport for transfer by road to JBS at Longford (94km) or Greenham at Smithton (132km) (Felix Domus 2013).

The boat comes once a week on a Sunday, leaving at approximately 9.30am (loading starts at 8am) and not arriving in Devonport until about 10.30pm that night. The boat is occasionally delayed or doesn’t come at all due to rough seas or conditions in Bass Strait. Furthermore, during peak season in mid to late spring there is limited capacity on the Searoad Mersey due to the large number of live cattle being transported. According to some stakeholders interviewed, some beef producers secure space on the vessel in advance, particularly if they feel it could be a dry summer and they may need to start shipping earlier in the season. The Bass Strait journey takes approximately 12 hours and costs around $110 per head for cattle. King Island beef producers have been given a temporary subsidy of $30 per head to offset transport costs and adjust to no longer having a local abattoir but this is only applicable to cattle and no other type of meat or animal.

Some of the King Island stakeholders interviewed expressed concern regarding the length and nature of the Bass Strait journey and the welfare of their animals due to the number of live cattle packed into the trailer and the often rough conditions of sea-travel across Bass Strait. In some cases, the journey by boat can stress the live animal thus impacting on the quality grading by
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abattoir upon its arrival. In the case of wallaby, the animals would be shipped as a carcass or packaged meat product.

To use the Bass Strait shipping service for wallaby, a refrigerated container (reefer) would need to be hired, adding cost to the journey. The only reefers used at present are for King Island Dairy. This company use their own containers. Some stakeholders revealed that previously it had cost them around $4,000 per container to ship processed wallaby off island. Between 700 and 800 (maximum) wallabies could fit into a container, assuming weight of approximately 4kg per animal. This suggests the cost of shipping would be in the range of $5.70 per animal, or $1.40-1.50 per kilogram. However, when a new business first starts exporting it is unlikely they will receive large orders straight away, hence some stakeholders interviewed felt that filling a large 20 tonne shipping container from the start of the venture would not be viable, efficient or effective.

Option 2 (and the more preferred option according to the stakeholders) is airfreight, using either King Island Airlines or TasFast, as both fly from Currie to Moorabbin airport in Melbourne almost daily. From there, the wallaby meat could be trucked to Melbourne International Airport, where it could board an international flight to Asia.

A number of the stakeholders interviewed suggested that there was capacity for airlines to freight wallaby meat off island into the Melbourne market. With two new golf courses expected to open on King Island there is an expected increase in the number of flights coming onto the island full and hence there are opportunities for a processor to back-fill these return flights with wallaby product. At present there are also a number of flights that fly to King Island full (for example with fresh produce or with milk supplies for the dairy) but leave with space available. Airfreight would also be suitable for packaging fresh cuts or whole wallaby carcasses and packaging in vacuum pack and then boxes. The existing *ad hoc* shipment of wallaby meat is chilled airfreight in 22 kg meat cartons with a plastic liner. In a large shipping container, a large amount of space can be lost if shipping whole carcasses. Shipment of a whole carcass, tail on, received for consumer trials in this report were rolled into a ball to fit within the 22 kg meat cartons and the spaces filled with vacuum packed meat. The flexibility of the backbone of the wallaby appears to enable a greater curl and thus a higher packing density can be achieved than with whole carcasses of four footed animals.

Although airfreight is more expensive than shipping, it offers more flexibility in terms of placing orders 2-3 days in advance, rather than having to reserve space on the ship a week in advance of the journey. The cost of freight between King Island and Melbourne varies according to transport volume, transport frequency and the type of service required. By increasing volume and/or frequency a reduction in rates can be achieved. The price also fluctuates according to whether you are back-freighting to Melbourne, or whether a special flight has been chartered. If the latter option, exporters are required to pay both to and from King Island (both legs), rather than just the one way. According to stakeholders interviewed, a good estimate of airfreight off island to Melbourne is between $1.30-2.00 per kilogram.

Note: no distribution network currently exists in Melbourne to handle freight off King Island if it is picked up and delivered on a Sunday. This is the only day in the week that the distribution service does not operate.

**Value Chain Stage 5: Transport and logistics to overseas markets**

Once the wallaby meat has arrived in Melbourne, transport to overseas markets is required. For this, airfreight is the only viable option given the perishable nature of the product. Stakeholders
interviewed suggested that the wallaby meat exporter would need to contract an international freight service provider, of which there are many to choose from. A global freight forwarding company with offices in Hobart provided an estimate of overseas airfreight. This freight forwarder transports chilled, fresh salmon on behalf of a Tasmanian company into Asian markets which, like wallaby, is a perishable product. Fresh wallaby meat could be packaged in sealed plastic and placed in 22 kg meat cartons with ice, which are insulated from the inside. These cartons would then be packed into an AVE (a type of container that is loaded and pushed onto the aircraft; made from either zinc or aluminium; can be closed off/sealed and therefore temperature controlled).

A full AVE can take up to 1,400 kg of weight; or 62 x 22 kg meat cartons. For a direct flight from Melbourne to Shanghai, it costs approximately $4,500 per AVE, excluding custom clearance costs. This cost equates to approximately $72 per carton, which can be further broken down to approximately $3.30 per kilogram, assuming 22 kg of meat in carton. If less wallaby meat can be placed in the carton, then the price would be higher. For example, 20 kg in a carton equates to $3.60 per kilogram. To transport frozen wallaby meat, it is slightly more expensive as it requires dry ice to be added into the AVE. Dry ice costs about $2.00 per kilogram and our source suggests around 40-50 kg of dry ice would be required for a full AVE, for the Melbourne to Shanghai flight. Therefore, they suggested we add about $100 to the $4,500 container cost.

The operator may also need to use a cold storage facility in Melbourne, where they could store the meat temporarily between arriving from King Island and boarding the international flight. As one stakeholder indicated, most cold stores charge per container, per day which can contribute quickly to international transport costs.

Exporting and transporting product overseas also carries a high degree of risk. Potential issues to consider are the variability of the Australian dollar. A high Australian dollar makes it hard for niche product exporters, as when the dollar strengthens against the destination market’s currency (e.g. the US), imported products become more expensive and the chance of inflation increases. When the Australian dollar trades at below 90 US cents it is considered ideal and going to give producers a much better return.

Another potential issue is customs clearance and quarantine laws of the importing country.

All imported foodstuffs and beverages are subject to inspections by the China Entry-Exit Inspection and Quarantine Bureau (CIQ). This can be a complicated and challenging process; be prepared and do not underestimate the cost, documentation and time required. Accessing up-to-date information on quarantine and customs requirements such as labelling and packaging requirements, food standards and allowable ingredient listings can be challenging... Foreign food manufacturers are required to register with the General Administration of Quality Supervision Inspection and Quarantine of the People’s Republic of China (AQSIQ). Manufacturers of dairy products, particularly infant formula, meat and seafood are subject to even stricter accreditation for the registration process. On the spot accreditation by Chinese government officials may be also required (Austrade 2014).

As one stakeholder explained, Chinese customs are renowned for closing borders and having containers of product (in many cases fresh or live produce) left for days. There can be no particular reason for the borders to close which is something that exporters just have to manage. Exporters of goods need to insure their cargo up until it reaches the destination point. Insurance coverage can be taken on a single transit or for an annual policy if exporting multiple times per year. In some
cases, exporters can take out insurance to help recoup some of the costs and losses resulting from closed borders but one would need to investigate the insurance options for fresh wallaby meat, as in some cases fresh or live produce cannot be insured. It also appears from our research that different conditions apply when shipping chilled or frozen meat, dairy products, fresh fruit or produce, small goods and medical suppliers; most likely due to their perishable nature. Similarly, if there are multiple goods/products in the one consignment this may also alter/complicate insurance options.

There are also complications with providing documents and certificates when entering export markets. One stakeholder explained that each time you send a load (and for each country it arrives in) you have to produce copies of your export documents. For example, in the case of wallaby, this may be a Meat Transfer Certificate. Presenting export documents can cost between $80-100 each time; a cost we understand that is set by the Australian Government.

The landmark China-Australia Free Trade Agreement (ChAFTA) may unlock new benefits for Australian meat exporters, including those exporting game meat. A key outcome of this new agreement has been the removal of tariffs of 12 to 25 per cent on beef over nine years and removal of tariffs on sheep meat of 12 to 23 per cent over eight years. Although Australian beef and sheep meat are key imports for China and game meat is significantly less so, trade agreements are designed to create opportunities for greater and more profitable trade between partners. The ChAFTA may result in some changes to the export and quarantine certification requirements and process for Australian fresh meat exporters. For example, although unlikely, a FTA could result in China becoming a Category/Tier 1 country.

Value Chain Stage 6: Agent or distributor in export market
Austrade provides businesses with sound advice regarding the decision to use an agent or distributor in export market(s). Given the premium nature of this product, the logical choice would appear to be an exclusive agent, with a strong distribution network among high-end restaurants in cities such as Shanghai. This would enable the King Island operation/business to control the branding, marketing and pricing of the wallaby. It would be necessary to schedule regular market visits and in-person training for this agent, to assist them in selling the wallaby product to high-end restaurant buyers and chefs. These travel and administrative costs would need to be factored into establishing a viable export value chain. Market research would also need to be conducted by the operator, prior to entering the market and before confirming negotiations with a local agent. Austrade recommend that exporters check the local conditions and market feedback for themselves and avoid relying too heavily on the information and feedback provided to them by their in-country agent (Austrade 2015).

Value Chain Stage 7: Consumers and branding
Although very few stakeholders eat wallaby regularly themselves, they all agreed it was a quality meat product much superior to other game meat such as kangaroo. Stakeholders felt that the health benefits were worth promoting. From their observations, wallabies have a lot of kidney fat and fat around the meat, which helps to add flavour and keep the meat moist. However, the meat itself is very low in fat (refer to nutritional analysis). Some stakeholders spoke of how superior the meat was to mainland Australia kangaroo because King Island wallaby do not have to travel any significant distance for food and water, they simply browse the land. Some stakeholders also wondered whether there was fat in the blood of wallabies because, compared to kangaroo blood, wallaby blood appeared to be good for your skin, producing what they labelled was a moisturising effect. Kangaroo blood, however, stained the hands of shooters and supposedly made their skin dry and cracked.
Asian Export of Branded King Island Wallaby

The stakeholders interviewed also believed that wallaby meat was healthy because the animals were grazing on some of the best pasture in the country; as they are eating natural pasture (grown for premium King Island grass-fed beef), so their meat is ‘clean and green’. As some stakeholders stated, “they have a pretty good life in that they don’t have to travel miles for food”. The wallabies engage in very relaxed grazing and this could potentially impact on the meat making it tenderer than other game meat, such as kangaroo.

Value chain cost estimation and summary

Stage 1 Landholder and farm
$0.00

Currently there is no return to farmers for wallaby meat that is taken from their property. As part of their wildlife control strategy, landholders pay a licenced shooter to cull animals on their property or they may have paid money to install wallaby proof fencing. They would also be required to pay a small amount for a crop protection permit. There may be additional costs associated with granting access to shooters to their property and/or being part of a sustainable harvest operation.

Stage 2 Field harvesting
$7.00 per wallaby

The estimated cost of field harvesting by a commercial, licenced shooter is $7 per animal. This cost includes field dressing (removing guts) and transporting animals to a processing facility. Commercial shooters on King Island provide their own vehicles and pay for their own training and annual registration and licence fee. At present, the wallabies harvested for commercial purposes weigh between 12-13kg which represents an animal three quarters grown.

Stage 3 Processing
$6.00 per wallaby  |  $7+$6=$13/4kg= $3.00-4.00 per kg of meat

Stakeholders interviewed suggested that an estimated cost of processing the wallaby meat to either primal cuts or as a presentable carcass would be $6 per animal. This cost includes skinning and boning out but did not include additional costs associated with establishing the facility, export registration, licences, audits, inspections and on-site vets. After processing, there is approximately 4-5kgs of primal meat (assuming the animal weighs between 12-13kg when it is brought in). With a slightly larger animal, output may be more like 6kgs.

Stage 4 Off-island transport and logistics
$1.30 - $2.00 per kilogram Currie > Moorabbin

To transport wallaby meat off King Island to Melbourne where it can board an international flight, the most preferred option is air freight. Stakeholders interviewed suggested the cost of air freight would be between $1.30 and $2.00 per kilogram. This cost depended on the volume and frequency of meat being freighted and whether a charter flight was needed or if the shipment back-fills an incoming plane to the island. This air freight cost doesn’t account for the cost of transporting meat from the on-island facility to the Currie airport.

Stage 5 Overseas transport and logistics
$3.30 - $3.80 per kilogram Melbourne > Shanghai
Currently, there are no providers exporting wallaby meat from Tasmania to Asian markets. Therefore, the cost presented is based on transporting chilled, fresh Tasmanian salmon. If the wallaby meat was transported directly from Melbourne International Airport to Shanghai it would cost between $3.30 and $3.60 per kilogram (slightly more $3.50-$3.80 if the meat was frozen). This cost does not account for the costs associated with customs clearance and export documentation nor the potential need for cold storage in Melbourne before being loaded on the international flight. Further investigation of these costs would be needed.

Total cost estimate of the chain

Total costs for Stage 1 through to Stage 5 would be between $7.60 and $9.80 per kilogram. This is exclusive of wholesale mark-up and marketing which are typically between 25 and 50 per cent of the total costs. There is also no allowance for farmer returns to compensate for grass lost to wallaby grazing. Wholesale mark up and in-market brand support could at least double the cost in market. The value paid to the farmer would therefore be related to the premium obtained in the Asian market. If it is close to that of the top end beef products, then a value of $5 to $10 per kilogram could be possible under a final selling price of $40-$60 per kilogram. Participation of farmers and other Island stakeholders in the wholesaling aspects of the value chain would allow further capture of value back to King Island.

Branding considerations

Value chain stakeholder interviews highlighted two primary considerations with regard to the branding strategy for King Island wallaby. First, the merit of promoting King Island over Tasmania in terms of wallaby provenance was raised. Concerns were also noted in terms of clearly differentiating wallaby meat from kangaroo meat.

Tasmania versus King Island branding

Quite a few stakeholders indicated they would be happy for the product to be branded as Tasmanian, rather than King Island yet still be primarily sourced from King Island. They agreed that Tasmania had a growing reputation in the Chinese and Asian market (following the Chinese President’s visit) and thus it would make sense to leverage this popularity and growing awareness. No one in China or Asia would have heard of King Island hence according to the stakeholders we interviewed, there is little sense trying to use this provenance in the branding strategy. Another benefit was that the broader consideration of provenance (i.e. Tasmania) would potentially allow wallaby to be sourced from mainland Tasmania in times of short supply from King Island.

Distancing wallaby meat from kangaroo meat

Quite a few stakeholders interviewed stressed the importance of distancing wallaby meat from kangaroo and ensuring the two were not confused by consumers in export markets. Kangaroo’s reputation in export markets has been tarnished. In 2014 Russia cancelled their import of Australian kangaroo meat due to high E. coli levels (Tapp 2014). The treatment of kangaroo and harvesting practices used by mainland Australia is also nowhere near the standard for harvesting wallaby in Tasmania. Furthermore, according to stakeholders, kangaroo is a much more ‘gamey meat’ and is not likely to be suitable for the Asian consumer palate. This was commensurate with findings from the Shanghai research,

Marketing and branding strategies to maximise value

Having ascertained the health properties of wallaby meat and established the market opportunity for wallaby meat in high-end Chinese restaurants through focus groups in Tasmania and depth
interviews in China, this section addresses the current market situation looking at the existing market for wallaby and competing products such as kangaroo. It then provides an overview of the King Island brand and considers the brand’s equity in the Chinese marketplace. Discussion of Chinese consumer behaviour in general and then, more specifically, in the context of meat consumption is followed by a practical discussion of brand strategy into China, including trade mark considerations and using the King Island brand to protect investment in market development.

Current market

Existing wallaby meat producers and their brand characteristics
Consideration of publically available information identified four primary organisations selling wallaby meat in Tasmania. Both Flinders Island Meat and Lenah Game Meats actively promote their harvest and sale of wallaby meat and are, according to their websites, highly sought after by top chefs across Australia. In terms of brand characteristics, both organisations heavily focus on the ‘environmentally friendly’ nature of wallaby meat (e.g. both reference the lack of methane gas that the wallaby emits) as well as the healthy, low fat nature of the meat (see Appendix D for a summary of all brand characteristics promoted by wallaby meat suppliers).

No wallaby meat appears to be available in the export market at this stage. This is not the case for kangaroo which seems to be heavily export focussed. When entering the export market, it would need to be determined whether there would be an advantage in ‘piggybacking’ on the reputation of kangaroo as it is already established in some markets, or, in fact, whether a differentiation strategy would allow higher value to be achieved. Kangaroo and wallaby are not heavily differentiated in the Australian market at a retail level.

Competing Kangaroo/game meat products and their brand characteristics
There appear to be three main players in the kangaroo meat market both domestically and in the export market: Game Meat Processing, Southern Game Meats and Macro Meats (Gourmet Game, Paroo Kangaroo). All three organisations have a strong online presence. Whilst Game Meat Processing appears to have an export focus, Macro Meats and Southern Game Meats appear more domestically focussed. Macro Meats, in particular, has a strong retail presence with their kangaroo products appearing branded in major supermarkets and independent retailers nationally. Similarly to wallaby product brand characteristics focussed on by suppliers, kangaroo suppliers tend to focus on the health benefits and natural and wild nature of the meat (see Appendix D).

Brand strategy

Current research on the King Island brand
In 2006, the King Island Council commissioned the King Island Place Brand Project (2006) to assist them in understanding the current position of the brand and subsequently allow them to more proactively manage their place brand into the future. According to the report, the following were core values associated with the King Island brand which the local community lives by every day:

- Quality community
- Quality produce
- Simplicity
- Island nature

They also identified benefits that came with these values, including:
In 2014, this project and its subsequent report (King Island Place Brand Project 2006) was reviewed by Hydro Tasmania in light of their brand impact assessment report which was conducted as the Hydro moved into the feasibility stage of the TasWind project. As part of the brand impact assessment, a workshop was conducted in February 2014 with 20 key King Island stakeholders to: affirm what King Island-based stakeholders understood the King Island brand to be, identify perceived impacts on attributes underpinning the brand and identify gaps in knowledge which could be filled though the proposed consumer market research. The workshop was then followed up with a survey (conducted by Roy Morgan Research) of potential and existing customers of King Island (both products and tourism). This was to measure TasWind’s potential impact on the King Island brand as a holiday/leisure destination and on consumers’ perception of the value of King Island branded products.

The results indicated that King Island branded products were still held in high esteem with ‘high quality’ and ‘premium’ being key descriptions that 50-60 per cent of respondents felt strongly applied to King Island products (Hydro Tasmania 2014). The King Island Brand Management Group (a special committee of the King Island Council comprising representatives from local industry groups) aims to protect such a reputation by ‘policing’ the integrity of all King Island products. They recommend minimum standards to be applied by each industry group for products associated with the King Island brand (see Appendix F). Wallaby meat would fit under the generic ‘agriculture “local”’ category which does not specify any additional requirements other than meeting the relevant industry regulatory framework. Should a branded wallaby meat market be deemed viable, this may need to be expanded to give additional weight to the provenance of the brand. Requirements similar to that of King Island beef would be appropriate.

The strength of the KI brand in China
There does not appear to be any documented evidence of the strength of the King Island brand in China. In addition, although China is Tasmania’s largest export market (generating about $610 million per year) and their largest tourism market (with 20,400 Chinese tourists visiting in the year to June – ABC 2014), little research seems to document the familiarity of the Chinese people with the Tasmanian brand. This may well have changed over recent months with President Xi’s visit to Tasmania. Chinese social media, Weibo’s spokesman Robin Zhu stated that “about 60 million people viewed hashtag tweets tracking Mr Xi’s visit to Australia during his seven-hour stay in Hobart. Tasmania’s reputation will be highly increased among the Chinese people” (ABC 2014). Outcomes of this high level of exposure are yet to be seen.

Is branded King Island wallaby meat in line with King Island brand values?
Consideration of King Island’s identified brand values and the primary characteristics promoted by both wallaby and kangaroo producers sees a correlation between the two. King Island focuses on quality produce, simplicity and well-being, among other values. These fit clearly with the product characteristics preferred by current wallaby and kangaroo meat producers, such as: low fat, healthy, sustainably harvested, free-range, hormone free, no-stress harvest. A branding strategy based on
such characteristics would provide a solid basis for a King Island wallaby meat brand. It would not, however, provide much differentiation in the market place as it would be a similar market proposition as that provided by Flinders Island Meat.

Although there are clearly many parallels between the island brand values and the development of a market for wallaby meat, there remain some issues around the perception of harvest. Harvest of the animals was identified as a potential limiting factor within the Australian market (RIRDC 2008). This research found that, “[d]espite the increasing acceptance of kangaroo meat, there remain issues around the harvesting of animals….[whilst] knowing the animals were harvested did not change attitudes to eating kangaroo amongst focus groups participants… there was an indication of increased sensitivity to hygiene factors and the welfare of the animal in the harvest”. The perceptions of harvest being calculated, regulated, involving highly skilled professional harvesters and having the landholder involved are important to maintaining a link with the values of the King Island brand. If managed correctly, in turn, the additional income generation for farmers through the sale of wallaby meat and preservation of pastures for beef and dairy grazing provides benefit to the development of the place brand by influencing local culture and enhancing community identity (Aitken and Campelo 2011).

Perhaps, in a similar vein, this is why current suppliers appear to be quite careful to specify that they only harvest particular animals, i.e. only males (GMP), only animals under 4 years of age (Lenah), only Bennetts and Pademelon wallaby (Flinders Island Meats). This strategy may attempt to dispel the imagery that environmentalists and other welfare groups tend to paint of the harvest situation whereby hunters do not distinguish between animals that are culled. Similarly, such imagery would not be in line with the King Island brand.

**Chinese consumer trends**

Consideration of academic literature and trade press paints an extremely complicated picture of the Chinese consumer. Their heterogeneous nature makes it all but impossible to clearly categorise consumers (Tam and Elliott 2011). What can be established, however, is that there are some distinct behavioural patterns which may impact the branding strategy of wallaby meat in China. Such patterns include, for example, being particularly influenced by word of mouth advertising, becoming increasingly less inclined to try new, unfamiliar products and a shift away from predominantly utilitarian focussed behaviour.

Atsmon et al. (2012) considered the building of brands in emerging markets and concluded that the decision making process of consumers, compared to developed markets, had a disproportional focus on word of mouth promotion. They based this on the premise that there is a higher mix of first time users, a shorter history of brand familiarity, a culture of social validation and a more fragmented media landscape. Figure 7 (below) shows how important word of mouth promotion can be in some emerging markets, with China showing the second highest number of respondents who received recommendations on food and beverage products from family and/or friends prior to purchasing.
This emphasis on word of mouth recommendations may, perhaps, also be related to the collectivist nature of the Chinese. Bates (2014) noted the importance of remembering that the Chinese are a collectivist culture and that while a few are willing to push boundaries, many are still reluctant to go to extremes. “Any pioneering Aussie brands should keep in mind that while new is good, revolutionary is going too far”. He also noted that whilst many international brands fail by not localising their product, others fail for over-localising their product and therefore not recognising the high consumer demand for Western brands.

Although not in the context of food consumption, Davis et al. (2012) found a shift away from predominantly utilitarian-focussed consumer behaviour to more hedonistic behaviour. Though research indicates that their emphasis on the ‘value’ of a product remains of primary concern (Atsmon and Dixit 2009), they also found, in line with the findings of St-Maurice et al. (2008), that food safety crises have meant that consumers are becoming less adventurous with their purchase behaviour. St-Maurice et al (2008) found a reduction from 29 per cent of people willing to try new packaged foods in 2006 to only 18 per cent of respondents two years later. As compared to their other studies, similar statistics in the US and UK were 40 per cent whilst Taiwan was 35 per cent. “When Chinese consumers try new products, they are twice as likely to grab those introduced under a familiar brand than under an entirely new one…once Chinese consumers recognize a brand they are likely to assume that it offers better quality and are willing to pay a premium for it” (St-Maurice et al. 2008).

The complexity of the Chinese consumer means that gaining an understanding from Chinese locals in the development of a wallaby market is even more important. Tasmania’s appointment of its first trade and investment representative in China (Shanghai) in 2013 (Migrating to Tasmania 2013) indicates its commitment to pursuing trade and investment opportunities within China. This resource would be pivotal in developing the targeted strategy that would be required for success in the high-end Chinese marketplace.

**Food safety**
There is much publicity about issues regarding food safety in China (e.g. de Barcellos et al. 2013; Orr 2013; Yan 2012; Zhou et al. 2013). “Food safety, or the deep felt belief in its absence, is one of...
the most powerful forces shaping consumer behaviour in China" (Orr 2014). Orr (2014) discusses the supply chain control that food manufacturers are trying to gain in an attempt to establish trust with consumers. From government subsidy of modern cold storage facilities in many cities to QR code scanning of fresh produce and the development of online shopping channels to enable faster delivery to consumers with less chance of interference and higher accountability, retailing in China is changing dramatically and rapidly.

Coupled with these changes, Cui (2011) and de Barcellos et al. (2013) also note the authorities’ push of consumers towards Western style supermarkets in attempt to make food safer. However, this has been met with some resistance as Chinese consumers love to handle fresh meat before purchase. Such behaviour is more commensurate with shopping in a wet market. This could cause some challenges for branded wallaby meat as the branded meat offering would be more difficult to differentiate in the wet market scenario. De Barcellos et al. (2013) do, however, pre-empt many more food scares as people become more aware of the risks of an industrialised agricultural system and the media takes an increasing interest in exposing such scares to the wider population.

The documented push by manufacturers, retailers and governments potentially sits well with consumers in light of such scares. In considering supplier-level specific trust and industrial-level specific trust, Chen (2013) found that Chinese consumers had more trust in industry-level players when considering food safety issues than with suppliers. Thus, the role of manufacturers and retailers is extremely important in shaping consumer perceptions of safety. Chen suggests that such market players should play an active role in promoting and enforcing food safety regulations.

These examples focus on the ‘safe’ emphasis that the Chinese middle class are pursuing. Such emphasis can be beneficial for countries such as Australia who are deemed ‘safe’ (Whitehead 2014). Andrew Forrest also focussed on the ‘safe’ perception of Australia’s food production when discussing export opportunities for the beef industry. Referring to the many scandals that have wrecked the Chinese food industry in recent times, Forrest stated that “[f]ood safety is a really big concern and for very good reason”. When people across the Asian region “want to eat protein or any kind of fresh meat, then they need to know the origin is clean, secure and trustworthy” (Bloomberg 2014).

Whilst, on the whole, Australia is considered safe, potential threats exist which can jeopardise this image. As previously discussed, there are a lot of media reports covering the issue of kangaroo meat being banned in Russia with Russian trade being closed in 2008, reopened in November 2012, only to be closed again in May 2014 (Tapp 2014), due to unacceptable levels of *E.coli*. Whilst Macro Meats owner, Ray Borda, the sole supplier of meat to the Russian market, stated that the Russian authorities were using the wrong testing protocols and that all meat left Australia in a safe condition, such information attracts extremely negative media attention. In the case of the kangaroo industry, it has also led to wildlife activists attempting to gain traction for their plight which does not support harvesting of ‘wildlife’.

**Meat consumption in China**

According to Orr (2014), by 2022 more than 50 per cent of urban households should be considered middle class (in current $, US$20-40k annual household income). This would be an increase of more than 100 million households over the coming decade. As China’s population increasingly moves from rural to urban and as incomes drastically increase for China’s middle class, consumption of meat and meat products in China is expected to continue increasing. A recent report by Zhou et al. (2012) into food consumption trends in China since 2000 discussed these
issues. They concluded that as consumption of grains decreases over coming years, meat and meat products will continue to increase. Considered in combination with the middle and upper class demand for safe and superior quality product (often imported), this presents opportunities for exporting meat into China. They also noted that educated consumers are increasingly paying attention to food nutrition and younger consumers are more interested in trying food from different cultures. In addition, there is growth in away-from-home food consumption as a result of income and lifestyle changes. All trends that bode well for a premium branded product such as wallaby meat.

Similarly to Zhou et al. (2012), Liu et al. (2009) found in their research of rural and urban Chinese consumers that income and meat price are the two main influencers of at-home meat consumption in China. As income increases, not only will the level of meat consumption increase but the composition of meat will change. Increased income, coupled with greater health concerns being noticed among higher income earners, such as some consumers moving away from fatty pork products to other meat products such as beef and mutton. The study also acknowledges that as most Chinese consumers are not familiar with the cooking methods of non-traditional meat items, that they would be more likely to eat them at restaurants.

There are several examples of boutique Australian beef exporters who have recently begun exporting to China. Argyle Prestige Meats (Beale 2014), Glenfyne Farms (Eggleton 2014) and Ralph’s Farms (Kitney 2014) have all recently been in the national media for their expansion into China, despite being small, boutique style organisations. It is on this basis of being ‘boutique’ that they have found the opportunity to launch their product into a premium market. Glenfyne Farms owner, Graham Flynn, has focused on educating Chinese consumers about eating quality to differentiate their meat (Eggleton 2014). Whilst beef is currently eaten in moderate levels by the Chinese, this push by boutique producers indicates that the Chinese middle-class are willing and able to pay premium prices for meat products.

Export opportunities for kangaroo
Consideration of recent national media found that several kangaroo meat processors are in the process of targeting China. After recently pulling out of exporting to Russia, Brisbane’s Game Meat Processing was in talks with China which they perceived would have "far greater potential...We've had our plant audited twice by Chinese authorities and passed. We have taken delegations out in the field to harvest kangaroos. The demand is there. We have just to date been able to establish a protocol with the Chinese authorities" (Lynch 2014).

Similarly, South Australia’s Macro Meats is also attempting to access the Chinese market for kangaroo sales citing the mystical and exotic persona of the kangaroo, the desire for safer and healthier foods and the lean, low cholesterol nature of the meat as being among the reasons for optimism about high prices (Austin 2013). Owner, Ray Borda, predicts Chinese kangaroo meat sales will reach $1.2 billion in the first five years of trade, a statistic that has perhaps gained more confidence with China's largest agribusiness company, New Hope, investing in Macro Meats. In terms of positioning the product, Mr Borda states that, "(t)hey plan to market it as a gourmet product in five-star restaurants and David Jones-style upmarket butcher shops at much higher prices than beef" (Austin 2013). "If the market was to open tomorrow, we would enter without much fanfare" (Packham 2013). This targeted entry strategy would be appropriate for branded wallaby meat to emulate.

Enthusiasm for the product is not only held by Australian game meat processors. For example, Australian restaurateurs operating in China are also excited by the prospect that the recent FTA
negotiations may mean operating in China becomes easier. James Sing, owner of Kakadu restaurant in Shanghai, recently stated that “he hoped Australia and China could come to an agreement on the lifting of a ban on the sale of kangaroo meat” (Murdoch and Lethlean 2014). Despite such optimism, the gates for the trade of game meat into China, at the moment, remain closed.

Whilst industry is excited at the potential of kangaroo sales into China, there are some challenges to be faced. In 2008, a government report on Australian consumption of kangaroo meat (RIRDC 2008) noted that many Australians are not keen to consume kangaroo based on ‘ethical’ grounds. Such concerns would need to be considered in China. Despite Chinese diners consuming cat, rat, dog and more exotic animals in the belief that they have medicinal qualities (Packham 2013), the ‘cute factor’ would need to be considered when attempting to appeal to Chinese consumers. This perhaps reignites discussion surrounding the creation of a culinary name for kangaroo and wallaby meat, similarly to venison describing deer meat. An industry-only competition decided on the preferred “Australus” for kangaroo meat (Guerrera 2005), although its adoption since has not been widespread. Showing potential for the Chinese market, the 2006 RIRDC report Potential Markets for New and Emerging Meats, found that, “other than China, very little demand is exhibited in Asia for kangaroo meat, probably reflecting the status of the kangaroo as a tourist attraction for our neighbours and thus not a food” (Bobbitt et al. 2006).

Another consideration, in light of Australian consumers’ minimal consumption of wallaby and kangaroo meat, is that Chinese consumers like Western brands that are also consumed in Western countries; not products that are solely produced for the Chinese market. “What they will have confidence in will be products sold here on a day-to-day basis that are also exported…that it might be from a company from Australia or New Zealand won’t be enough…they will want confidence those brands are also available in Australia” (Smith 2014).

Despite the political support of, for example, John McVeigh, Minister for Agriculture, Fisheries and Forestries, Queensland (2012-2015) and Barnaby Joyce, Federal Minister for Agriculture, who have been actively campaigning in China for the sale of kangaroo meat, there is currently no protocol in place for the export of game meat to China (Austrade 2014). This is despite the opportunities being afforded meat producers through the FTA with the Austrade website stating:

Increased interest and demand for Australian food and beverage is being driven by China’s strong economic growth and its rising per capita income. Emerging second tier markets, wealthy coastal cities and not just the hubs of Beijing, Shanghai and Guangzhou, are providing opportunities for Australian companies to access a share of the market….Australia is recognised by local consumers as having a clean and green environment with good quality products and brands. Many Australian exporters have taken advantage of this competitive edge by establishing a position as suppliers of meat (chilled or frozen), dairy products, fresh fruits, seafood and other products.

**Facilitating brand success in China**

Given the potential size of the market, the success of wallaby meat in China will need to be carefully managed to ensure that greater demand is not generated than the market can supply. In Australia, supply issues generated by boutique suppliers within the hospitality industry, are of great concern to restaurateurs who can be very hesitant to feature such products on the menu. When entering the high-end restaurant market in China, similar issues would need to be considered.
The boutique nature of the product and limited capacity to supply vast numbers does not lend itself to widespread publicity and marketing activity. Instead, a more targeted approach focussing on provenance and the nutritional, textural and flavour qualities of the meat would be preferred. Within the domestic market, such messages are more easily facilitated when a strong, direct relationship is held between the supplier and the chef/restaurateur. In Australia, it has been shown that the strength of the relationship between the producer and the retailer/restaurateur has a direct impact on the likelihood of the buyer supporting the producer’s brand strategy. As previously discussed, this research has found that similar considerations will be pertinent when developing the King Island wallaby brand in China.

**Brand protection**

According to the China Patent and Landmark Office (www.chinatrademarkoffice.com), King Island (though not King Island in Australia) is registered in China.

Although China offers many opportunities, the many risks inherent in the marketplace can cause significant concern for multinational organisations operating there. In 2014, China updated its trade mark law significantly in an attempt to modernise key parts of their legislation. The Government’s IP Australia website (www.ipaustralia.gov.au) offers an overview of IP Protection in China but many legal firms also offer suggestions for navigating complicated Chinese trade mark laws. Key considerations are outlined below:

- Registering IP rights in China is slower and more expensive than in Australia. Without a residential or business address in China, applications must be filed through Chinese agents or attorneys (IP Australia 2014).
- Documents filed with the State Intellectual Property Office of China or the Chinese Trade Mark Office must be submitted in Chinese, therefore translation fees should be factored into the total cost of applications. The State Administration of Industry and Commerce is responsible for administering trade marks which are registered through the China Trade Mark Office (IP Australia 2014).
- China operates a “first-to-file” system for trade marks, instead of a “first to use” system such as in Australia. In the past, this has posed great challenges for organisations (e.g. Apple who paid $60m to a squatter who had registered the iPad trade mark in China). However, recent changes to trade mark law means that there is now a “right of prior use” defence to infringement. Recent changes to trade mark law have also included a “good faith” requirement. Therefore, for example, where an applicant files for a trade mark when they know that it is already in use by another, this may constitute “bad faith” and be considered a breach of trade mark law. Whilst this change to legislation is a step in the right direction, it is yet to be seen how determination of “good” or “bad faith” will occur in reality (Hayne and Clarke 2014). (Brand cloning issues are particularly pertinent with regard to this ruling).
- A trade mark licence must be recorded on the Chinese Trade Marks Register. Whilst the trade mark owner previously only had three months to apply to be included on the register, recent legislative changes now allow recording of the trade mark licence at any time during the term of the licence agreement. It is however recommended that such registration occurs immediately to ensure recognition of the trade mark (Hayne and Clarke 2014).
- China has a single-class filing system which means that separate applications must be submitted for each class in which protection is required (Lee 2013).
- A “fair use” defence has been brought in to cover honest non-trade mark use, including generic use of a trade mark. Therefore, if a trade mark has become generic, this may be cause for
cancellation of the trade mark. Brand managers must ensure that brands are not being misused in a descriptive or generic sense (Hayne and Clarke 2014).

- Three-dimensional shapes and colour combinations can be protected as trade marks in China. Recent legislative changes have also included protection of sound marks (Hayne and Clarke 2014).

- Brand managers must consider the complexities of the Chinese language and review the three linguistic elements of form, sound and meaning. As recommended by Geboers (2013), if a brand does not have a “direct and natural Chinese translation, the best course of action is to choose a common Chinese transliteration or a hybrid approach that combines phonetic transliteration and more literal translation. For example, the Chinese mark for Starbucks, Xing Ba Ke, combines a translation of the word star, which is Xing in Chinese, along with a transliteration of the sounds Ba Ke. The transliteration has no meaning in Chinese but it creates phonetic consistency for the brand”.

- Enforcement of a trade mark without registration is possible, although the process tends to be more expensive and less predictable. Since 2004, Customs Recordation of IP Rights has offered cross-border measures to protect IP rights (IP Australia 2014).

- Trade mark registrations may be removed from the register if they are not used for three or more consecutive years after registration (IP Australia 2014).

- Enforcement of IP rights is available through both administrative and judicial avenues (IP Australia 2014).

If considering exporting to China, it is recommended by IP Australia that organisations contact a Chinese attorney to advise on local IP, customs and other laws regulating imports and trade in China.

What issues will new products face in terms of brand piracy?

Brand piracy issues are faced by all industries across the world. In the agri-food sector, Italy is constantly seeking to protect its food brands, regions and overall country from organisations who aim to capitalise on the country’s reputation. Brand piracy and cloning are two issues faced by organisations operating in China which may impact wallaby meat producers. Brand piracy, a more generic term where pirates are engaged in all processes of intellectual property theft (Shultz II and Saporito 1996), has been an issue for Australian wine producers (Senate Enquiry 2012). For example, an organisation released a Chinese product called “Benfolds” (as opposed to “Penfolds”) and sold it in the market with the intent of deliberately misleading consumers. As quality is questionable, this can cause irreparable damage to the brand and overall market.

Brand cloning, a more specific act of piracy, is also an issue in China. Geboers (2013) discusses a trade mark challenge encountered by Hermes whereby the Chinese manufacturing company Dafeng Garment Company secured the trade mark “Ai Ma Shi” which was the Chinese transliteration of Hermes. As Hermes had not considered the transliteration trade mark, this was considered available and the Chinese company was allowed to continue trading under that name. As mentioned in the previous section, when entering the Chinese market and choosing a trade mark, it is important to consider the three linguistic elements of form, sound and meaning and if there is not an obvious Chinese translation, the best approach is to choose a common Chinese transliteration or a hybrid approach that combines phonetic transliteration and more literal translation (Geboers 2013).

Shultz II and Saporito (1996) offer a variety of different strategies to counter brand piracy and counterfeiting, ranging from doing nothing based on a simple cost-benefit analysis to educating
stakeholders and therefore removing demand for the illegal goods. Cheung and Prendergast (2006) also focus on educating consumers to remove demand for counterfeit goods. Similarly to Sonmez et al. (2013), they also identify after sales service as being an area that original-brand marketers can differentiate themselves on to help mitigate the damage caused by counterfeiters.

Whilst consideration of Chinese pirates warrants consideration, King Island branded wallaby will also need to consider Australian organisations piggybacking on any potential success in the market by placing wallaby meat in the Chinese market. It would be suggested that regardless of where the threat comes from, the reaction would remain the same. King Island branded wallaby meat must invest in the brands and relationships with key players in the chosen marketplace to ensure integrity of the product and preference for the brand.

Proposed brand strategy
Based on the literary review above, combined with insights provided by the qualitative research undertaken, the following brand strategy insights are provided:

China offers an exciting market opportunity to those organisations willing to invest in understanding the market. It is a complex market with heterogeneous consumers that require a great deal of market research before a targeted marketing strategy could be considered possible. Despite the complexity of consumers and the difficulty Western marketers have in understanding them, the market potential for premium food producers are endless in light of the growing number of middle class who are experiencing increased wealth and are heavily influenced by food safety. The Chinese people’s collectivist nature is an important consideration for brand strategy with celebrity endorsement and word-of-mouth advertising working effectively in such environments. This correlates with earlier discussion.

The brand characteristics preferred by existing wallaby and kangaroo suppliers operating in the domestic and export market are cohesive and don’t conflict with King Island brand values. Similarly, the Island’s brand values reflect the clean and green premium image that the Chinese middle and upper class are seeking in terms of food consumption. However, no clear case exists for branding the wallaby meat as being from King Island, or in fact Tasmania. In light of President Xi’s recent visit to Tasmania, consideration should be given as to whether an association with ‘Tasmania’ would be preferable to ‘King Island’. However, to widen the focus to Australia in terms of provenance would allow more instant recognition, as well as allowing supply from broader Australia should demand exceed supply capabilities on King Island. China’s perception that Australia provides ‘safe’ food could then be capitalised upon.

If export of wallaby meat was to commence to China, marketers would need to decide whether the market would differentiate wallaby from kangaroo in the marketplace or piggyback on the success of kangaroo exports. The preferred strategy may depend on the perceived strength of the export market. However, in light of previous discussion with regard to kangaroo acceptance in the marketplace, it is likely that a clear delineation between the two would be preferable when developing brand identity. Despite the market entry paths that have been forged by kangaroo producers around the world (not China), the research indicated that there is a perception that kangaroo meat can be sour. Combined with the translation issues seen in terms of kangaroo meaning rat and the perception of kangaroo being Australia’s national icon (likened to eating panda), it was the suggestion of the Shanghai based research team to clearly differentiate the two in the mind of the Chinese consumer.
Conclusions and recommendations for further work

Wallaby meat is a food product that is relatively unique to the area and currently undervalued for the economic potential of returns from sustainable harvest.

Despite the difficulties with shipment from King Island to Asia the total costs of supply including harvesting, processing, packaging and air freight to Asia would be around $10 per kilogram. If wholesale and marketing costs were 50 per cent, then a feed compensation value of up to $10 per kilogram assigned to producers would give a realistically achievable sale value of around $40 per kilogram in the market.

There are substantial hurdles in meeting the regulatory requirements for exported meat or game meat products but these are addressable as demonstrated by progress toward legal exports of kangaroo to China.

The smaller scale of the on-Island wallaby processing operation would be challenging to make viable and would require adaptation strategies to suit the local situation.

Wallaby meat is very acceptable to Asian tastes and can be adapted into culturally familiar dishes.

The value in the Asian markets such as China would depend on achieving a reputation as a premium product but $40 per kilogram is comparable to existing premium beef values.

There would be a need to market wallaby, which is arguably of higher quality, to differentiate it from kangaroo. A separate and branded culinary name for wallaby meat could be used.

The very limited supply of wallaby would be best utilised by supplying only a limited number of top-level Chinese restaurants where marketing and consumer education could be focused.

To implement further development:

- A King Island stakeholders group should develop options, approaches and a business plan to establish a wallaby export operation targeting high-end restaurant markets
- The wallaby processing facilities capable of processing up to 40,000 animals per year should be included in development of an on-Island multispecies abattoir
- The true costs and detailed actions for meeting export market licensing requirements need to be determined
- A value chain including farmers as the producers, as well as processors and marketers, needs to be established so that all parties have a stake in the success of the chain
- The King Island stakeholders should secure ownership of a Chinese brand around a culinary name for wallaby in the Asian market on which further brand value can be built
- A sustainable harvest practise to maximise the supply of premium animals for meat while maintaining a stable population in balance with beef or dairy production needs to be developed in place of current mass culling of animals
- Research is needed on the yield and value of prime wallaby meat obtainable from harvesting off farmland so that it can be compared to the value of lost grass production
- The impact of selective harvesting on wallaby population dynamics and the additional costs associated with selective harvest need to be determined.
Asian Export of Branded King Island Wallaby

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Asian Export of Branded King Island Wallaby


Tam C and Elliott G 2011, Branding and product evaluation across Chinese regions, Marketing Intelligence and Planning, vol. 29, no. 4, pp. 385-402


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Appendix A: Nutritional analysis and promotion of wallaby meat

Table 4 Composites prepared for nutritional analysis

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Meat Cut</th>
<th>Animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallaby 1</td>
<td>Loin and Rump</td>
<td>Large Buck</td>
</tr>
<tr>
<td>Wallaby 2</td>
<td>Loin</td>
<td>Medium Buck and Doe</td>
</tr>
<tr>
<td>Wallaby 3</td>
<td>Rump</td>
<td>Medium Buck and Doe</td>
</tr>
<tr>
<td>Wallaby 4</td>
<td>Loin and Rump</td>
<td>Large Buck</td>
</tr>
<tr>
<td>Wallaby 5</td>
<td>Loin</td>
<td>Medium Buck and Doe</td>
</tr>
<tr>
<td>Wallaby 6</td>
<td>Rump</td>
<td>Medium Buck and Doe</td>
</tr>
</tbody>
</table>

Table 5 Nutritional analyses completed on each composite

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>*NIP</th>
<th>Omega 3 **FA</th>
<th>Iron</th>
<th>Phosphorus</th>
<th>Zinc</th>
<th>Selenium</th>
<th>Riboflavin</th>
<th>Niacin</th>
<th>Pyridoxine</th>
<th>Cobalamin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallaby 1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Wallaby 2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Wallaby 3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wallaby 5</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wallaby 6</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Nutrition Information Panel  **Fatty Acids*
Table 6 Analytical methodologies used to determine wallaby meat composition

List of standard methods employed in a nutritional information panel

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST METHOD</th>
<th>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture</td>
<td>Moisture</td>
<td>AOAC Official Methods 920.115, 920.116, 926.08, 927.05, 941.08, 952.08, 977.10, 934.06</td>
</tr>
<tr>
<td>Ash</td>
<td>Ash</td>
<td>AOAC Official Method 972.15</td>
</tr>
<tr>
<td>Dietary Fibre</td>
<td>Total dietary fibre</td>
<td>AOAC Official methods 993.19, 991.42, 985.29</td>
</tr>
<tr>
<td>Fat</td>
<td>Fatty acid profile (incl. Total, Sat, Mono, Poly and Trans)</td>
<td>AOAC Official methods 996.06</td>
</tr>
<tr>
<td></td>
<td>Total fat</td>
<td>AOAC Official method 991.39, 963.22, AS2300.1.3-2008</td>
</tr>
<tr>
<td>Sugars</td>
<td>Sugars</td>
<td>AOAC Official Method 982.14</td>
</tr>
<tr>
<td>Sodium</td>
<td>Sodium</td>
<td>AOAC Official Method 984.27</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>Carbohydrate</td>
<td>FSANZ Standard 1.2.8. FSANZ NIP (Nutritional Information Panel) Users Guide</td>
</tr>
<tr>
<td>Energy</td>
<td>Energy (cal/kJ)</td>
<td>FSANZ Standard 1.2.8. FSANZ NIP (Nutritional Information Panel) Users Guide</td>
</tr>
</tbody>
</table>
Nutritional Analysis of Wallaby Meat

Introduction

The whole loin and rump from six King Island Bennetts wallaby (Macropus rufogriseus) were blended after six days storage in Cryovac bags at <4°C. Samples were analysed by ALS Global Food Laboratory using NATA accredited testing methodologies.

Wallaby and Nutrition

Wallaby meat is exceptionally high in protein and very low (<1%) in fat and energy content.

Table 7 Nutrition information panel for Bennetts wallaby, average loin and rump

<table>
<thead>
<tr>
<th>Nutrients and Units</th>
<th>Amount per 100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kJ)</td>
<td>418</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>21.7</td>
</tr>
<tr>
<td>Fat - Total (g)</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat - Saturated (g)</td>
<td>0.4</td>
</tr>
<tr>
<td>Fat - Mono (g)</td>
<td>0.2</td>
</tr>
<tr>
<td>Fat - Poly (g)</td>
<td>0.2</td>
</tr>
<tr>
<td>Fat - Trans (g)</td>
<td>0.125</td>
</tr>
<tr>
<td>Omega 3 (mg)</td>
<td>92</td>
</tr>
<tr>
<td>FFA (g)</td>
<td>14.08</td>
</tr>
<tr>
<td>CHO - Total (g)</td>
<td>0.96</td>
</tr>
<tr>
<td>Sugar (g)</td>
<td>0.28</td>
</tr>
<tr>
<td>Sodium (mg)</td>
<td>41.6</td>
</tr>
</tbody>
</table>

Wallaby Meat Comparison

Wallaby is equivalent to kangaroo, with very good meat nutritional characteristics but higher in omega 3 fatty acids. In comparison to beef, wallaby is much lower in energy, total fat, saturated and trans fat whilst maintaining comparable protein.
Table 8 Composition of kangaroo (fillet), beef (fillet) and wallaby (loin and rump)

<table>
<thead>
<tr>
<th>Nutrients and Units</th>
<th>Amount per 100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kangaroo</td>
</tr>
<tr>
<td>Energy (kJ)</td>
<td>397</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>21.4</td>
</tr>
<tr>
<td>Fat - Total (g)</td>
<td>0.9</td>
</tr>
<tr>
<td>Fat - Saturated (g)</td>
<td>0.26</td>
</tr>
<tr>
<td>Fat - Mono (g)</td>
<td>0.26</td>
</tr>
<tr>
<td>Fat - Poly (g)</td>
<td>0.3</td>
</tr>
<tr>
<td>Fat - Trans (g)</td>
<td>0.014</td>
</tr>
<tr>
<td>Omega 3 (mg)</td>
<td>50</td>
</tr>
<tr>
<td>FFA (g)</td>
<td>-</td>
</tr>
<tr>
<td>CHO - Total (g)</td>
<td>0</td>
</tr>
<tr>
<td>Sugar (g)</td>
<td>0</td>
</tr>
<tr>
<td>Sodium (mg)</td>
<td>40</td>
</tr>
</tbody>
</table>

All data on Kangaroo and Beef obtained from NUTTAB database 2010

Minerals

Bennetts wallaby offers a lean, nutrient-dense meat option with comparable phosphorous, selenium, zinc, riboflavin, niacin, B6 and B12 to beef and kangaroo but slightly less iron.

Table 9 Mineral composition of kangaroo (fillet), beef (fillet) and wallaby (loin and rump)

<table>
<thead>
<tr>
<th>Nutrients and Units</th>
<th>Amount per 100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kangaroo</td>
</tr>
<tr>
<td>Iron (mg)</td>
<td>3.4</td>
</tr>
<tr>
<td>Phosphorous (mg)</td>
<td>220</td>
</tr>
<tr>
<td>Selenium (mg)</td>
<td>0.02</td>
</tr>
<tr>
<td>Zinc (mg)</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Vitamins

Table 10 Vitamin composition of kangaroo (fillet), beef (fillet) and wallaby (loin and rump)
Wallaby Meat: Healthy Eating

Lean | High Protein | Nutrient Rich | Low Calorie

Wallaby meat is sustainably harvested from grass-fed wild populations, protecting the environment from overgrazing. Wallaby meat is an excellent source of natural healthy eating from the pure clean environment of Tasmania:

Good for Health

*Wallaby meat is lean because it is 99% fat free.*

- Wallaby meat has less than 1% fat, the lowest fat of all animal meat.
- Wallaby meat is more than nine times lower in saturated fat than lean beef.
- Limiting saturated fat intake is linked to a reduced risk of heart disease.

![Graph showing total fat and saturated fat comparison between Wallaby and Beef](image)

Good for a Healthy Diet

*Wallaby meat is high in protein.*

- Wallaby meat has a high protein content (22%) like other red meat sources.
- A 200gm serve of wallaby meat provides almost 50% of the recommended daily protein intake (RDI) for an average adult.
- Protein plays a vital role in cell maintenance and repair. The protein found in meat sources such as wallaby is also of high biological value.
**Wallaby meat is rich in vitamins and minerals.**

A 200gm serve of wallaby provides:

- 95% of the average adult Recommended Daily Intake (RDI) for B12
- 75% RDI for selenium
- 80% RDI for niacin
- 60% RDI for zinc
- 22% RDI iron

**Good for Weight Loss**

**Wallaby meat is low in calories.**

- Wallaby meat has an exceptionally low calorie content (418kJ/100gm) compared with common red meat sources such as beef (710kJ/100gm).
- Choosing lower energy food sources like wallaby meat helps when trying to lose weight.

![Energy comparison graph]

**For more information contact:**

Professor Roger Stanley roger.stanley@utas.edu.au
Why Eat WALLABY MEAT

Lean - 99% Fat Free | High Protein | Low Calorie | Nutrient Dense - High Iron, Zinc and B Vitamins

High in Protein
Wallaby meat maintains a high protein content (22%) comparative to other red meat sources

Optimum Fat Profile
The total fat content of wallaby meat is very low at <1%. The saturated fat content of wallaby (0.4gm/100gm) is more than nine times lower than beef (3.73gm/100gm)

Low in Energy
Wallaby meat has an exceptionally low kilojoule content (418kJ/100gm) compared to beef (710kJ/100gm).

Good Source of Vitamins & Minerals
Wallaby meat is a good source of iron phosphorous, selenium, zinc, riboflavin, niacin, omega 3, B6 and B12
Appendix B: King Island wallaby meat preparation and dishes

Carcass as received

Fore-quarter and hind leg removal

Split down backbone

Tenderloin removed

Leg deboned

Tail cut for soup
SCOTCH: Crispy fried, dried shallot, garlic, chilli, capsicum, seasonings

REAR LEG SHANK: Braised, winter bamboo, shiitake, bay leaves, fermented red bean curd paste, broad bean sauce
LEG RUMP: Sautéed, ginger, shallot, garlic, leek, cumin seed, Asian barbecued sauce

FRONT LEG CUTS: Slow cooked, potato, mint, onions, tomato paste
TENDERLOIN: Baked, black pepper, diced mushroom, coriander, crispy baby spinach

TAIL: Dried Chinese herbs, pork shins, boiler chicken, double boiled soup
Appendix C: Interview protocol

The following interview schedule took place for each participating restaurant within the focus group:

- Make appointment
- Conduct interview at the restaurant
- Introduce the project and King Island wallaby
- Complete all set interview questions, taking approximately 1-1.5 hours. Interviews were audio-recorded with the permission of the interviewee(s).

To ensure the quality of each interview, the research maintained the following standards and procedures:

- Make appointments with restaurant managers and introduce project first
- Conduct interviews only in the afternoon break/off-peak time in restaurant
- A gift (worth CNY200) was given to the restaurant manager in appreciation of their involvement
- All 15 interviews were voice-recorded and transcribed by the Shanghai team leader - Allen Xi
- The restaurant’s address and the interviewee’s contact details were retained. All facets of the interview required to meet the ethics standard were undertaken
Appendix D: Brand characteristics of wallaby and kangaroo meat

Existing wallaby meat producers and their brand characteristics

The information below provides details of the product supplied by Flinders Island Meat and Lenah Game Meats, specifically identifying the key brand characteristics that they use in their online communication. This information has been sourced from publicly available resources.

Flinders Island Meat
- www.flindersislandmeat.com.au
- Pasture Fed Wallaby (Bennetts Wallaby and Pademelon Wallaby)
  - Also supply: milk fed lamb, saltgrass lamb, Angus beef
- Key markets: Australian high-end restaurants, specialty gourmet retailers
- Brand characteristics:
  - Environmental ‘green’ focus. “Flinders Island Wallabies have an enzyme present in their digestion system that negates the production of methane gas… Our wallaby is virtually carbon neutral”
  - No-stress life of animals before harvest. No predators
  - Pasture based diet – free range gives unique flavour
  - “Delicate, clean flavour with only a hint of gaminess”
  - Extremely low in cholesterol and fat and very high in protein and minerals, resulting in one of the healthiest meats
  - Novelty of a truly Australian, indigenous ingredient
  - Need for farmers to cull and important Aboriginal custom of only killing to eat
  - Appeals to high-end clients “Flinders Island Wallaby is served at 3 of 4 restaurants that received prestigious 3 Chef Hat ratings in The Age Good Food Guide – Attica, Vue de Monde, Jacques Reymond”
  - Harvest of wallabies is on a restricted quota basis that is reviewed annually and is independent of market demand.

Lenah Game Meats
- www.lenah.com.au
- Wallaby (Bennetts Wallaby)
- Also supply possum, wild harvest venison, hare, rabbits
- Key markets: Domestic – primarily one distributor for each state. Available in major supermarkets in Tasmania. Brisbane, Melbourne, Adelaide – available in specialist retailers/supermarkets
- All meat is packed into 1kg vacuum bags and has a shelf life of 8 weeks (fillets)
- Brand characteristics:
  - The largest national processor of human consumption wallaby meat – have the scale and volume to supply (see Appendix E for current local supermarket range and prices)
  - Age grade all of the meat for the food service sector. Only animals 4 years and younger are used in food service and retail ranges. The remainder of product is used in the pet food range. “The age of the animal is very important to ensure a consistent tender product. We provide fully denuded portion controlled cuts and all of our meat is pan ready”
Ethical focus – believe it makes sense to create markets for wallaby and possum meat given they are animals perfectly suited to our environment

Animal welfare – “We undertake careful government controlled harvest of wallabies from their natural environment by a team of professional harvesters to ensure our welfare outcomes are the highest possible”

“Wallabies emit almost no methane, a very harmful greenhouse gas, whereas sheep and cattle do in large volumes. Thus wallaby meat can be eaten with a carbon free conscience”

Wallaby is a high protein, low fat meat (0.05%). It’s a delicate meat aptly described as the “veal of kangaroo”

Uniquely Tasmanian product.

Bruny Island Game Meats

- There is no publicly available information on this organisation
- Richard Clarke, wallaby harvester (Mather 2014)

Osmaston Meats (Bruny Island)

- There is no publicly available information on this organisation other than that they are an approved wildlife trade operation, according to the Department of the Environment website, for Bennetts Wallaby and Rufous (pademelon) Wallaby Meat, Skins and Fur. Their approval period is from 23 April 2014 until the 22 April 2017. Such approval is required to export Australian native animals.

A summary of key products and brand characteristics for each of these organisations is included below. The following has been sourced from publicly available information.

Game Meat Processing

- www.gamemeatprocessing.com.au
- Products available: kangaroo and wild boar
- Queensland based, Australian owned organisation
- Self-professed, equal largest producer of game meat products in Australia - processes about 800,000 kangaroo carcasses a year, more than 500,000 of which are sent overseas (Lynch 2014)
- Supply both chilled Kangaroo and frozen Wild Boar products for the retail grocery, foodservice, restaurant and hospitality markets in overseas and domestic markets
- Certification: EU, Korea, Holland Vietnam, Hong Kong
- Markets: Canada, Japan, Republic of Korea, Vietnam, EU, Peru, Singapore, South Africa
- Brand characteristics
  - Male only harvesting
  - Kangaroo meat is 100% natural
  - Being a free range game meat, meat is free from growth stimulants and artificial chemicals making it an extremely safe meat to eat
  - Extremely high in iron and protein while being 98% fat free – very low saturated fat and trans fat contents, which can contribute to lower cholesterol when compared to other red meat options
Kangaroo is the highest known dietary source of conjugated linoleic acid (CLA) which is a fatty acid that studies have shown can contribute to the reduction of body fat.

Southern Game Meat
- www.sgm.com.au
- Products: Kangaroo only
- Based in New South Wales
- Product: Meat comes in a wide variety of different cuts which are freshly vacuum-sealed
- Brand characteristics
  - “Australia’s "natural wild game meat"
  - Kangaroo can claim to be free from chemicals, hormones and pesticides often associated with various species of farmed animals
  - Good source of high quality protein as well as many important vitamins and minerals; it is always lean, high in iron and zinc
  - Low fat content and is very low in saturated fats
  - A fine textured soft meat with tender muscle fibres and little connective tissue (collagen)
  - All kangaroo carcasses destined for export markets are individually subjected to post mortem inspection by highly trained inspectors under the supervision of AQIS Veterinary Officers.

Macro Meats/Gourmet Game
- www.gourmetgame.com.au (retail) (see Appendix E)
- www.parookangaroo.com.au (trade)
- Products: Kangaroo, venison, wild rabbit
- South Australian based, family operated business
- Recently partnered with one of China’s largest agribusiness operators, New Hope Group Ltd. The two firms are developing a strategy to encourage product exclusivity by limiting supply into high-end butchers, not supermarkets (Packham 2013)
- Range of value-added kangaroo products distributed nationally to supermarkets, including Coles, Woolworths and Independents
- Brand characteristics:
  - Nutritional benefits, e.g. Source of high-quality protein, low in fat, low in saturated fat and a source of heart-friendly omega-3’s, iron and zinc, B-group vitamins
  - Open range meat (not farmed) - free from antibiotics, added growth hormones and added chemicals
  - Naturally contains Conjugated Linoleic Acid (CLA)
  - The National Heart Foundation ‘Tick’
  - Strong focus on all age groups enjoying kangaroo.
Appendix E: Supermarket prices

Australian imported beef: A substitute for wallaby

Considering that beef, especially Australian imported beef, will be the main substitute option or competing product, it would be prudent to benchmark the wallaby meat to beef, especially premium beef cuts such as rib eye fillet.

Figure 8 Australian imported beef

Figure 8 (above) shows the price of Australian imported beef at Sam’s Club (June 2015), Shanghai.

From left to right:

- Frozen Veal cutlets CNY116/Kg, about AUD23/kg
- Rib Eye Fillet CNY197/Kg, about AUD40/Kg
- Beef Belly (Vacuum Packed) CNY34.5/Kg, about AUD7/kg
- Grain Fed Veal Rib Fillet CNY316/kg, about AUD63/Kg

Information from Alibaba.com, the largest e-commerce B2B platform, shows the average price for kangaroo meat is CNY30/kg (AUD6/kg) for bulk buying (when the customer buys more than 50 kilos). Fillets of kangaroo meat are higher in price but still below CNY60/kg (less than AUD12/kg). The meat close to the tail ranges from CNY20-30/kg.

Figure 9 Price range of kangaroo meat
Local Supermarket Range and Prices, Ulverstone, Tasmania, 14 April 2015

Both Coles and Woolworths were visited in Ulverstone on 14 April 2015. The following ranges and prices were identified.

**Coles**

*Lenah Game Meats*

- Wallaby mince, 500g, $5.00 ($10.00/kg)
- Wallaby sausages, 375g, $5.99 ($15.97/kg)
- Wallaby kebabs, 500g, $10.00 ($20.00/kg)

*Macro Meats*

- Kangaroo mince, 1kg, $8.99 ($8.99/kg)
- Kangaroo sausages, 500g, $5.29 (on special 2 for $5.00) ($10.58/kg)
- Kanga burgers, 440g, $5.29 (on special 2 for $5.00) ($12.02/kg)
- Kangaroo meatballs, 300g, $4.00 ($13.33/kg)

**Woolworths**

*Lenah Game Meats*

- Wallaby mince, 500g, $4.49 ($8.98/kg)
- Wallaby sausages, 375g, $5.99 ($15.97/kg)
- Wallaby fillet (lemon myrtle and pepper berry or plain), 500g, $22.99 ($45.98/kg)

*Macro Meats*

- Kangaroo mince, 500g, $4.49 ($8.98/kg)
- Kangaroo steak, $17.99/kg
- Kangaroo fillet, $21.99/kg
- Kangaroo kebabs, $14.98/kg
Coles (April 2015)
Asian Export of Branded King Island Wallaby

**Woolworths (April 2015)**
Appendix F: Minimum standards to associate with the KI brand

The King Island Brand Management group recommends the following minimum standards to be applied by each industry group for products associated with the King Island brand:

Retail and Service

- Membership of King Island Chamber of Commerce or King Island Tourism Incorporated is required
- Codes of practice exist for all operators, therefore ongoing quality is ensured by the relevant industry (e.g. food premises license, temporary food business license)
- Products associated with the King Island brand are to be purchased from establishments approved by King Island Brand Management group
- Ongoing professional development and/or training offered to staff members, to ensure minimum standards of customer service

Tourism

- Membership of King Island Chamber of Commerce or King Island Tourism Incorporated is required
- Accreditation by Australian Tourism Accreditation Program (ATAP) is preferred
- Compliance with relevant transport, accommodation, food handling and licensing accreditation
- Ongoing professional development and/or training offered to staff members, to ensure minimum standards of customer service

Food Processing

- Membership of King Island Chamber of Commerce is required
- Products are sourced, produced or substantially transformed on King Island
- Producers/suppliers meet standards relevant to their industry packaging/labelling is clearly recognisable as "King Island" in origin
- Ongoing professional development and/or training offered to staff members

Seafood- including Kelp

- Membership of King Island Chamber of Commerce is required
- Product is sourced from King Island waters
- Fresh, live and healthy at point of sale
- Australian Quarantine inspected
- Export accredited (AQIS)
- Food tracing systems are applied
- Transport, process and production systems as per HACCP and AA
- Compliance with Department of Primary Industries and Water - Fisheries Management

Agriculture Beef

- Membership of King Island Chamber of Commerce is required
• Product supplied to abattoirs is covered by regulatory framework (e.g. NLIS, LPA) and voluntary programs (e.g. Cattlecare)
• Processor covered by regulatory framework (e.g. AQIS, AUSMEAT, MSA)
• Supplier must prove livestock is processed on King Island.
• Livestock imports - animals must be grass-fed on King Island for at least 3 months to be considered King Island product

**Agriculture Dairy**

• Membership of King Island Chamber of Commerce is required
• Product supplied to King Island Dairy covered by regulatory framework
• Daily test of milk
• Annual inspection of dairy
• Grain feeding
• Both farmers and cheese makers prefer grass fed
• Grain to be used as a supplement
• Grain to meet Tasmanian import standards
• Dairy farm effluent covered by regulatory framework, annual inspection

**Agriculture "Local"**

• Membership of King Island Chamber of Commerce is required.
• "Local" product eg honey, eggs, lamb, wallaby, bobby calves, pigs, private kills are covered by their relevant industry regulatory framework, e.g. Council food premises license, Tasmanian Food Act
Appendix G: Australian standard market access (Tier 1)

At the time of writing Meat Notice 14-04, the Department of Agriculture was able to certify exports of meat and meat products from Australian Standard export-registered State regulated establishments to the following markets:

- Albania
- Algeria
- Bahrain
- Cook Islands
- Cuba
- Egypt (subject to inspection visit and listing)
- Fiji
- Ghana
- Indonesia (subject to inspection visit and listing)
- Jamaica
- Jordan
- Kuwait
- Mozambique
- New Caledonia
- New Zealand
- Oman
- Papua New Guinea (subject to listing)
- Qatar
- Solomon Islands
- Sri Lanka
- Timor-Leste (East Timor)
- Tonga
- Tunisia
- Tuvalu
- United Arab Emirates (not including slaughter)
- Vietnam

Note: this list is subject to change.

It is the responsibility of the Australian Standard export registered establishment to review their approved arrangement against the manual of Importing Country Requirements to ensure that they meet the requirements for listing eligibility and produce product to the market access requirements.

From the Department of Australian Government Department of Agriculture Meat Notice 04-14:

Establishments wishing to be registered under this export model (Tier 1) must apply through their State Regulatory Authority (SRA) for export registration to markets that accept product produced to the Australian Standard (AS). Once the SRA has agreed that the applicant is meeting all the requirements of the state food safety regulations and the Australian Standard, the establishment shall submit an Application for Registration (EX26, available from the Department).

The Department and the SRA will then undertake a combined audit of the establishment and its operations against the AS and the SRA audit and control system for that establishment. The
additional elements that are required to ensure product integrity and eligibility for certification as described in the Approved Arrangement section below will also be audited. Upon satisfactory completion of the combined audit, the registration application (EX26) will be submitted for consideration.

The Department will issue a registration number and Export Registration Certificate which records the details of the establishment, the Approved Arrangement and the persons who manage and control operations. Except for wild game meat, the establishment must be accredited by AUS-MEAT in the use of the Australian Meat Industry Classification System (i.e. the meat description language used to identify all export beef, sheep and goat meat, meat products edible offal and runners).

Australian Standard (Tier 1) establishments will operate under the supervision and control of the relevant SRA. Initially, the Department shall verify that the SRA has systems in place to discharge its responsibilities, shall verify the individual establishment’s compliance against the AS and the Approved Arrangement and register the establishment for export. The Department will certify product exported from those establishments. On a regular basis, the Department will verify the SRA’s ability to ensure that compliance with the AS and Approved Arrangement is assessed and any non-compliances are dealt with appropriately.