

The Need For Improved Skills In The Australian Meat Industry

Ferry Jie* and Kevin A. Parton**

The significant overall problem relating to the performance of the Australian beef supply chain was observed to be unskilled and inexperienced staff or personnel. Based on the results of the research, suggested solutions are to provide training, knowledge and skills development for managerial and technical staff. Moreover an underlying approach should be to develop deeper and richer relationships between industry, vocational education and training and higher education sectors. This would enable the more widespread use of group training provisions that have already proved successful in some key locations. Additional improvements would include better targeted recruitment, selecting and recruiting more highly skilled migrants and integrating training with innovation and technology diffusion.

Field of research: Supply chain management, Australian beef, managerial staff, technical staff, training

The Australian meat industry is an important industry as the fourth highest commodity export earner. The inclusion of overseas customers (more than 100 countries around the world) in the supply chain is necessary given that Australia typically exports about 65 percent of its production. The value of the production of the Australian red meat industry was about \$8.1 billion in 2007. In addition, the Australian red meat industry provides employment for more than 50,000 employees (Commonwealth of Australia, 2006). The objective of the research was to assess the major constraints to the implementation of effective supply chain management in the Australian beef industry.

*Ferry Jie, Sydney Business School, University of Wollongong, Wollongong, NSW 2522, Australia. Email: ferry@uow.edu.au

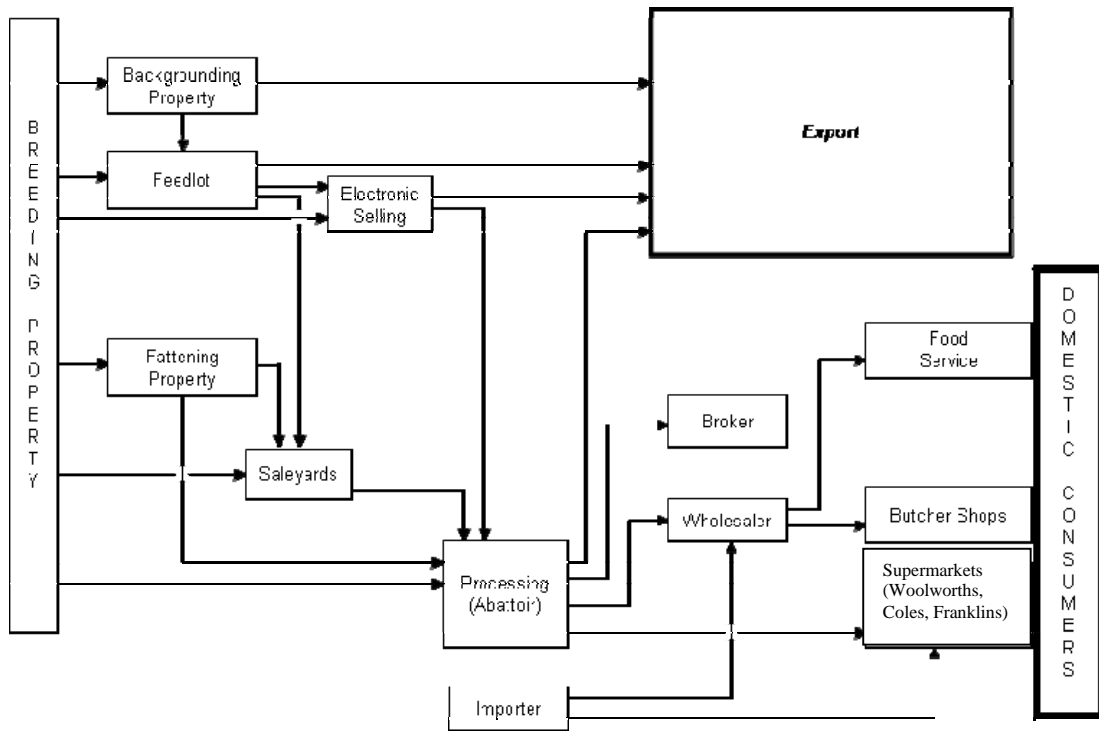
**Kevin A Parton, School of Marketing and Management, Charles Sturt University, Orange, NSW 2800, Australia. Email: kparton@csu.edu.au

In the next section a supply chain framework is developed. This is followed by a description of the survey method adopted. The results of the survey revealed that the major issues were related to the human resource aspects of the supply chain. This led to an examination of a number of proposals for overcoming these human resource problems.

2. Australian Beef Supply Chain Framework

An Australian beef supply chain framework is shown in Figure 1. It has four levels: cattle production, beef processing, beef retailing/wholesaling and final consumer. Within this, significant processes include (Peterson et al., 2000) transport (transport specification, quality systems and price), product storage (storage specifications, quality systems, storage management practices), preparation and packaging (grading and packaging standards such as AUS MEAT language specifications), quality systems and market access (statutory export regulations, quarantine issues).

Figure 1. Australian beef supply chain framework



There are two types of integrated supply chains in Australian beef enterprises. First, fully integrated supply chains which have cattle moving from feedlots/farms to processors who transform them into beef products and organise delivery into the hands of end customers. Large retail beef enterprises such as Woolworths and Coles have fully integrated supply chains. Second, partially integrated supply chains have supply chain activities only from slaughtering to end customers or from producing to slaughtering. Small and medium beef enterprises mainly contribute to these partially integrated supply chains.

3. Method

A supply chain management survey for the Australian beef industry was conducted by distributing a mail questionnaire to beef producers, processors and retailers/wholesalers. The survey asked participants in the industry to express their views on various aspects of the supply chain. The effective response rate was 23 percent. The results of the survey are reported in detail in Jie (2008). They indicated that the principal overall concern when managing beef supply chains was unskilled and inexperienced personnel. More than 80 percent of survey participants indicated that they were concerned about these issues.

Moreover, by comparison, other problems of the supply chain including shipping error, shipping delay and quality problems, government policy, high inventory and variability of customer demand received little attention from respondents. This suggested that the current project should give them lower priority. As a consequence, the focus of the research became a review of the causes of skill shortages and potential methods of mitigating them. The methods adopted to examine this issue were first to analyse the published literature, and then to conduct interviews with key personnel both in the beef sector and in training organisations.

4. Literature Review

The survey results suggesting that unskilled and inexperienced personnel were the significant issues facing efficient operation of beef supply chains led to an investigation of the (sparse) literature on this subject. There were about 133,300 employees in Australia's domestic grain, sheep and beef cattle farming industries in 2004-05. New South Wales employed the most people (about 34,475), followed by Queensland (about 29,750), Victoria (about 27,450), WA (21,900), SA (15,100), Tasmania (3,570) (DAFF 2005). There is evidence of a shortage of skilled labour on many of these farms. Dolan (2005, p.1) highlights the issue:

"Businesses in rural areas right across Australia are battling to find skilled labour - it's a scenario we've heard a lot about in recent years. And farmers who advertise for workers commonly say they don't even get applicants!"

Furthermore a guest-worker program has been envisaged to bring these skill to Australian agriculture (Millbank 2006). The National Farmers Federation also addressed the skills shortage (Davison 2005, p.1):

"Education, training and promotion are just some of the factors highlighted by the National Farmers Federation, as the steps necessary to ease the rural labour shortage. The Government heard the concerns of the NFF, and those of the organisation Rural Skills Australia, in Parliament House yesterday, as part of the inquiry into the skills drought."

If you examine the farm labour problem more closely at the State level you can obtain a more detailed understanding of the issues. Dakis (2006) showed that Tasmania has experienced a skills shortage for many years. Moreover following the collapse of two rural training bodies due to lack of funding, the Tasmanian Farmers and Graziers Association is seeking a review to "help determine a workable training system for agriculture, horticulture and the Tasmanian wine

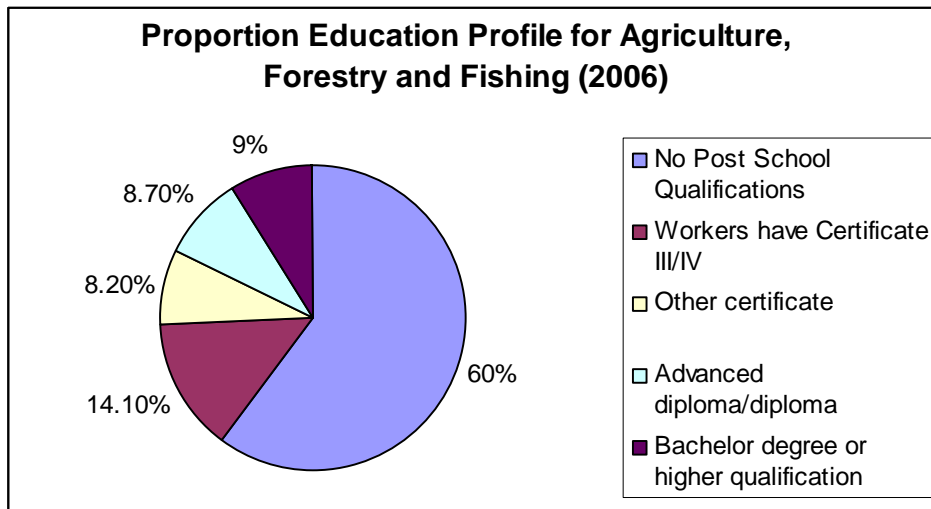
industry” Dakis (2006, p.1). The skills shortage is just as great in the meat processing industry, which comprises abattoirs/boning rooms, smallgoods operations (including wholesalers), food services operations and meat retailers (Agri-Food Industry Skills Council 2009). Australia has about 300 abattoirs including boning rooms with about 25,000 workers. Most of the workers are younger than 35 years old. The sector has a high level of participation in structured training with about 10,000 workers attending training each year. There are about 6,800 workers in the smallgoods sector at approximately 160 mainly urban-based establishments. The product is mostly for the domestic market and there has been a steady increase in large-scale manufacturing and new product lines. Meat retailing includes independent butchers, supermarket butchers and meat departments. There are about 24,000 workers in meat retail in Australia and about 1,000 new apprentice butchers each year (Agri-Food Industry Skills Council 2009). In respect of the Australian meat processing sector, the Australian Meat Industry Council (2006, p.6) has highlighted the difficulties faced by its members in finding skilled labour. This is a particularly acute problem in regional areas. Turning to the retail sector, according to the National Skills Needs List (replacing the Migration Occupations in Demand List (MODL) (Australian Apprenticeships 2009), there is a national shortage of retail butchers. This suggests that both butchers and slaughterers are in high demand.

5. Results and Discussion

5.1 Training, Knowledge And Skills Development

Figure 2 shows the educational profile for the Agriculture, Forestry and Fishing industries. There is a high proportion of workers without post-school qualifications (60 percent). Many of the skills required for this sector are probably learnt on-the-job rather than through more formal training, knowledge and skills development in TAFE, colleges or higher education providers (Workplace Australia, 2007). However, there are also many employees who could benefit from additional formal training.

Figure 2. Proportion Education Profile for Agriculture, Forestry and Fishing in 2006 (ABS, 2006)



The Australian beef industry could do more to enhance the skills of existing managerial and technical staff in order to get “*World class skills for world class industries*” (Australian Industry Group, 2004, p.3). In the management area this will involve increased industry commitment to enhanced training, knowledge and skills development. This will place a stronger emphasis on employability skills (generic skills and capabilities or key competencies) from entry level through to middle management. The survey results suggest that this prognosis applies equally to the meat processing and beef farming sectors. In this management context, DEST has identified eight employability skills (generic skills and capabilities): communication; teamwork; problem solving; initiative and enterprise; planning and organising; self-management; learning; and technology (DEST, 2002).

One way to increase beef industry commitment to training, knowledge and skills development programs in the technical area is by enhancing payment incentives to employers, butchers and slaughterers, apprentices and other individual employees (Australian Industry Group, 2004). In order to make training more accessible and affordable, the Commonwealth Government provides a range of incentives to encourage employers to offer the kinds of employment-related training opportunities that will encourage people to acquire, complete and expand their working skills to commence an industry-based career.

5.2 Integrating Training Methods To Ensure Innovation And Technology Diffusion

A number of technologies have been developed and introduced in Australia to enhance the efficiency of farm operations. They include:

- Industry adoption of wireless technology which remotely monitors a range of farm data from the location of the beef herd on remote stations to the level of soil moisture on intensively irrigated pastures (Wark et al., 2007);
- The use of digital image processing and remote sensing, high resolution images of crops and grasslands can be obtained. These enable site-specific management of grassland, yield measurement and prediction of grain protein levels (Schellberg et al., 2008); and
- Using computer technology to monitor tractor performance (Tullberg et al., 2007).

With such remote technologies applied to the Australia beef industry, firms need to integrate training methods to ensure rapid diffusion. Departments of Primary Industries in every state, MINTRAC, Agri-food Industry Councils and higher education providers have programs available to assist with this.

5.3 Skilled Migration

The shortage of skilled labour is considered by many Australian beef organisations to be the greatest immediate challenge (Australian Meat Industry Council, 2006). This was confirmed in our survey work. A short-term solution is to import more highly skilled workers from overseas under what is called a Temporary Business (Long Stay) visa (Subclass 457), commonly called a “457 Visa”. The main criterion for the Australian beef industry to hire higher skilled workers from overseas is that the firm needs to be the sponsor of the skilled worker and this may bring with it a number of requirements such as medical coverage, training in the English language and assisting the worker to settle into the community.

5.4 Group Training Provisions

Currently, there are not many meat industry courses (Certificate I in Meat Processing to Advanced Diploma of Meat Processing) across Australia. Data from the Australian Job Search website (Australian Jobsearch, 2007) was collected and analysed. Table 1 shows the number of meat processing courses from Certificate I Meat Processing to Advanced Diploma of Meat Processing by state. It shows that WA, NT and ACT have the lowest number of meat processing courses. In addition, the courses are concentrated at the lower levels. This may partly be the result of the tyranny of distance across rural districts preventing the accumulation of a critical mass of students.

Table 1. Number of Meat Processing Courses from Certificate I to Advanced Diploma of Meat Processing by state level in Australia.

No	Course name	WA	VIC	TAS	ACT	NSW	NT	QLD	SA	TOTAL
1	Adv Dip of Meat processing	0	0	0	0	0	0	0	1	1
2	Dip of Meat Processing	0	2	0	0	2	0	1	3	8
3	Cert IV in Meat Processing-General	0	2	0	0	2	0	1	3	8
4	Cert IV in Meat Processing-Leadership	0	3	0	0	3	0	2	2	10
5	Cert IV in Meat Processing-QA	1	3	0	0	3	0	3	3	13
6	Cert III in Meat Processing-Boning	1	5	1	0	3	0	9	2	21
7	Cert III in Meat Processing-Food Services	0	2	1	1	3	0	1	2	10
8	Cert III in Meat Processing-General	0	2	1	0	2	0	2	3	10
9	Cert III in Meat Processing-Meat Retailing	1	2	1	1	5	1	10	3	24
10	Cert III in Meat Processing-Rendering	0	3	1	0	1	0	3	3	11
11	Cert III in Meat Processing-Slaughtering	0	1	1	0	1	0	2	3	8
12	Cert III in Meat Processing-Small Goods	0	4	1	0	3	0	9	3	20
13	Cert III in Meat Processing-Boning	0	4	1	0	1	0	1	3	10
14	Cert I in Meat Processing- Meat Retailing	0	1	1	0	2	0	2	3	9
15	Cert I in Meat Processing-Smallgoods	0	4	1	0	0	0	0	2	7
16	Cert II in Meat Processing-Abattoirs	2	5	1	0	10	0	9	2	29
17	Cert II in Meat Processing-Food Services	0	2	1	1	2	0	8	1	15
18	Cert II in Meat Processing-Meat Retailing	0	2	1	1	5	0	9	2	20
19	Cert II in Meat Processing-Smallgoods	0	4	1	0	1	0	1	3	10
20	Participate in OH&S Risk Control Process	0	0	1	0	0	0	0	0	1
21	Smallgoods Production	0	0	0	0	2	0	0	0	2
	TOTAL	5	51	15	4	51	1	73	47	247

MINTRAC is a company owned by the meat industry which supports professional development of meat industry personnel by providing training and skills development programs. Its main purpose is to improve the skills of workers in the red meat industry (including processing (abattoirs and boning rooms), butchers, supervisors, senior stock handlers, livestock managers, small-goods and meat retailing), through the provision of recognised and accredited training from entry level through to senior management (MINTRAC, 2007). MINTRAC works together with the meat industry to provide the following services (MINTRAC, 2007): the development and review of national qualifications and training frameworks (including National Training Packages); the development of training and assessment materials to support training packages (including management and continuous improvement of HACCP-based quality assurance systems and animal welfare); the implementation of training or workshops in the industry (for example, to assist key quality assurance staff in beef enterprises to develop appropriate measurement tools); the demonstration of product/process conformity; the measurement of the level of customer satisfaction or

dissatisfaction; the continuous improvement of quality system effectiveness; and the representation of meat industry training interests at State and Federal levels.

In cattle production, several extension courses for cattle/livestock producers are delivered by DPI Victoria (Kilpatrick and Millar, 2006). Courses cover Prograze, (optimal use of pasture) beef nutrition, beef herd health (managing a productive healthy herd), “carving up the meat pie” (marketing), breeders for profit by improving cow selection, beef marketing by increased number of cattle meeting target market specifications, effective breeding programs, and “beef cheque” (grazing management and other skills to increase profitability) (Kilpatrick and Millar, 2006). While these are all useful activities, the analysis from our survey indicates that an expansion of group training provisions across Australia is appropriate. The Vocational Education and Training (VET) sector needs to provide skills and knowledge for work, enhanced employability and assist learning throughout life. In addition, VET needs to have pathways for university study options, which would then provide up to six levels of nationally recognised qualifications in most industries. The VET system’s involvement with industry is multi-level. VET assumes there will be workplace learning and training with industry supervisors. The limited amount of previous training means that it is often difficult to find enough supervisors.

5.5 The Relationship Between Industry, VET And Higher Education Sectors

There are several advantages of establishing deeper and richer relationships between meat processors, smallgoods manufacturers, beef retailers/wholesalers and vocational education and training and higher education sectors. Meat processors, smallgoods manufacturers and meat retailers will be in a position to inform educational providers about what are essential present and future skills and knowledge requirements in the industry. Second, training and education providers will be encouraged to implement strategies to increase opportunities for quality training in the industry. Furthermore, industry participants and educational providers can combine together to seek funding for training activities from State training authorities, DEST, the Agri-Food Industry Skills Council, registered training organisations and New Apprenticeship Centres.

An example of a deeper and richer relationship between meat industry training and skills development organisations involves MINTRAC, which frequently works in partnership with registered training organisations to facilitate the delivery of high priority accredited training courses, or to introduce new models of delivery or resources (MINTRAC, 2007). Companies or individuals seeking to undertake

accredited training related to national meat industry qualifications will need to go to a registered training organisation (RTO). RTOs may access a wide range of support services from MINTRAC including (MINTRAC, 2007):

- advice on industry models for the delivery and assessment of the Certificates in Meat Processing;
- assistance with negotiations with meat companies and the implementation of training;
- training and assessment materials to support the delivery of the Certificates in Meat Processing;
- information on State and Federal Government funding and incentives for employers and RTOs;
- support and advice in their negotiations with the State Training Authorities;
- provision of workshops and support for their trainers to discuss and resolve issues arising from the delivery of the Certificates in Meat Processing; and
- referrals from employers who are interested in training.

Another example of a collaborative approach is Meat Livestock Australia (MLA) working together with a number of education providers for course material development, research projects and specialist research and development roles relevant to the red meat industry. In addition, MLA helps the meat industries to develop relationships with their local education providers, which often have industry partnership programs.

5.6 Better Targeted Recruitment

Another way that the Australian beef industry can obtain essential skills is through better targeted recruitment of butchers, apprentice butchers, slaughterers, apprentice slaughterers, meat processors, smallgoods makers and apprentice smallgoods makers. These workers need a skills level such as an AQF Certificate III Meat Processing Course or a higher qualification (Australian Jobsearch, 2007). In some instances relevant experience should be required in addition to the formal qualification. Firms involved in cattle production also need to achieve better targeted recruitment. Farm managers are considered to need a bachelor degree or equivalent qualification and at least five-years' relevant experience. (Australian Jobsearch, 2007). Also self-employed farmers should be encouraged to attain these education levels.

6. Conclusions and Further Recommendations

Analysis of beef supply chains in Australia revealed that the critical issue affecting their operation is a lack of an appropriately skilled workforce. This led to a review of six areas of skills development that are currently available. Some are still at an embryonic stage, and all could be enhanced in the various ways indicated in our review. Perhaps the most critical need is in management and technical training. As a follow-up to the research described here, further detailed analysis could be completed of each of the proposals discussed above. For example, the general impression gained from our survey work was that improvements in group training would be particularly useful to the industry. However, this impression remains in the realm of hypothesis to be examined and perhaps confirmed in future research. In addition, further research needs to be done to delve more deeply and discover solutions for other supply chain concerns such as government regulation and variable customer demand issues.

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