

Work, skills and training in the Australian red meat processing sector

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About the research



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Work, skills and training in the Australian red meat processing sector

Kent Norton and Mike Rafferty, Workplace Research Centre, University of Sydney

Work practices in the meat-processing industry have changed in recent years. The industry has moved away from workers dressing a whole carcass towards a chain-based system, with each worker performing a single task along a moving production line.

The nature of the meat-processing workforce has also changed. It is no longer dominated by seasonal but longer-term workers, usually white and male. It is now diverse and often characterised by workers with low levels of post-secondary education and literacy. Significant pools of labour are temporary (417 visa holders, backpackers and grey nomads), contributing to high levels of staff turnover.

This report investigates what these significant changes have meant for training in the industry.

Key messages

- Training systems have been adapted to accommodate the new work systems, with training now oriented to on-the-job induction and learning of single tasks.
- The case studies demonstrated the importance of quality supervision and the building of a safe and supportive culture in the workplace. Improved supervisor training, as well as practices that support workers as teams and individuals, result in safer and less stressful places to work.
- The training systems accommodate rather than prevent the high rates of labour turnover in the sector. The meat-processing industry employs many workers who are entering or re-entering the paid labour force, and many of these workers move onto other areas of the paid labour market.

This report arises from the second year of a three-year program of research on training and workforce development in industries which are characterised as low-skill entry points to the labour market. Readers may also be interested in an overview of this report, available from www.ncver.edu.au/publications/2300.html.

Tom Karmel
Managing Director, NCVER

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Executive summary

This paper reports on a study of work, skills development and training in the red-meat-processing sector. The study involved both a review of this sector as a whole and several detailed case studies. It finds that changes in the competitive conditions, ownership structure and industrial conditions in the Australian red-meat industry have been influencing how meat-processing work is performed, how skills are being developed and used, as well as who is attracted to the industry and how long they stay.

Changes in the Australian meat-processing industry

The red-meat-processing sector in Australia has undergone some profound changes over the last three decades. These have had, and continue to have, important consequences for the nature of work, skills and training. Key changes in the meat-processing sector over the last 30 years have included:

- ✧ Changing supply chain dynamics, market orientation and ownership structures have all been important in driving a greater focus on cost and quality control.
- ✧ The industry has responded to the changes of the last 30 years at a number of levels. There are now far fewer but larger processing sites, and meat-processing firms often own multiple processing sites, as well as activities up and down the value chain. There has also been a concerted effort to secure consistent input supply (including the growth of the feedlot industry and better transport logistics).
- ✧ Meat processors have also adopted a strong focus on quality control. The Australian industry has emerged as a leading exporter of processed meat, with a hard-earned reputation for hygiene and quality.
- ✧ One area of particular focus has been labour relations and control over work processes and practices. The earlier system of industrial relations (embodied in, among other things, the ‘tally’ system) meant that workers had a great deal of control over how they did their work. After a protracted period of disputation and changes to job design, management now has much more control over all aspects of work, payment systems, skills formation and use.
- ✧ Despite many attempts to mechanise, meat-processing work remains relatively labour-intensive and is physically demanding and sometimes dangerous.
- ✧ Work practices and skill utilisation have changed. In contrast to earlier work processes, where teams of workers would dress a whole carcass at a time (a sort of industrialised butchering trade), the industry has moved to a chain-based system, with each worker now performing a single task (such as a single cut) along a moving dis-assembly line. Workers performing these tasks will over time gain training in other tasks and may rotate to other tasks. Some work in teams (or rooms); others do not. But the skill requirements of meat processing are now less of a trade and more and more a collection of task-based competencies. Along with changes in industrial relations, this task specialisation of work has made jobs in meat processing relatively less attractive.
- ✧ Related to the developments above, the nature of the meat-processing workforce has also changed significantly. It has proved difficult to attract and retain many of the sorts of workers

who populated meat-processing sites in the past, both because the size of individual plants has grown (larger processing capacity and the introduction of second shifts) and the increased relative attractiveness of other occupations (in terms of pay and occupational status). The workforce is no longer dominated by seasonal, but longer-term, workers, usually white and male. The workforce is now diverse across many dimensions and subject to high levels of turnover. Consequently, meat-processing firms now draw labour from many different sources and from diverse backgrounds. The sector is often characterised by workers with low levels of post-secondary education and low levels of literacy (especially in the case of workers from abroad, creating a need for multilingual approaches to training and supervision). By their nature, some of these pools of labour are temporary (417 visa holders, backpackers and grey nomads), but all sources of labour experience quite high levels of turnover.

Training and workforce development in the meat-processing sector

The changes in the meat-processing industry described above have influenced the training and workforce development in the sector. Key findings from this research show:

- ✧ Training systems have adapted to accommodate the new work systems, the types of labour entering the meat-processing workforce, the new demands on skill development, and the high rate of labour turnover.
- ✧ Training is now oriented to on-the-job induction/learning of single tasks, and these task competencies (say, in slicing and/or boning) are then assembled into formal qualifications (certificates II and III). The industry has developed a comprehensive training package across many areas of meat-processing work, which seems to be widely used throughout the industry. These training initiatives have been successful in helping to address issues of workplace diversity (including issues such as the diverse language and cultural backgrounds of workers). They have also been critical to addressing the challenges of improving productivity, safety and flexibility. The training systems have not, however, prevented high rates of labour turnover from becoming the industry norm.
- ✧ The case studies provided strong support to back the sector's work on improving the social development of workplaces, especially in terms of the quality of supervision and the building of a safe and supportive culture in the workplace. We found that improved supervisor training, as well as practices that support workers as teams and individuals, seem to result in safer, less stressful and more attractive places to work. These are also workplaces that can accommodate the wider and more diverse pools of labour now available for running large processing plants in conditions of labour shortage.
- ✧ While the industry has many traineeships, and training systems are more formalised and extensive (with attention turning to rebuilding the idea of a career or vocation in the sector), there is a fairly low completion rate for traineeships. In the context of high turnover, post-traineeship utilisation rates are also low. This appears to be a legacy of the flows of labour going through the sector and the types of jobs currently on offer, rather than the particular attributes of training (enterprise registered training organisation vs TAFE college) per se.

It is possible to identify a tension between the continual churn in the sector's labour pool and the changing flows of labour into and out of the sector. The sector has a model of training that seems to accommodate the sector's high labour turnover. Meat processing also employs many workers entering or re-entering the paid labour force and who are being deployed to a very demanding work process, in terms of safety, hygiene and product quality. Much of that labour may then flow to other areas of the paid labour market. This tension between managing these labour flows as labour churn on one hand, and reflecting the sector's new role of providing an early port of entry (and re-entry) from unpaid to paid labour and harnessing temporary labour pools (both for the sector and the wider labour market) on the other, is unresolved and still being played out. Thinking about the industry's evolving supply and utilisation of skills (and the risks associated with them) in this way is useful for

setting up the next phase of the research, which is concerned with the role of vocational education and training (VET) in increasing workforce participation.

Broader findings

The study concludes with five general findings, which may be applicable to other industries:

- 1 Supply chain and cost pressures on firms can increase trends towards task specialisation in process industries. This leads to training becoming more narrowly (competency) focused and consequently shorter, making it more amenable to being delivered on the job. This supply chain pressure is particularly pertinent in the meat-processing industry in Australia because of the dominance of two large retail chains.
- 2 The undermining of industrial conditions and job skill requirements can in turn reduce the attractiveness of such work, leading to higher labour turnover. In conditions of labour shortage and turnover, this will often force employers to more or less continually look for new sources of labour.
- 3 Cost pressures may encourage task specialisation and reduce the attractiveness of the work. Furthermore, when the workforce is more transient or temporary, jobs will tend to be broken down into work that is quick to learn, enabling training to be kept to a minimum.
- 4 As firms grow, dedicated (often in-house) training arrangements become more financially viable and are preferred, especially where government training funding is offered to the provider.
- 5 Supervisors and on-the-job trainers play a major role in modelling good work practices and in supporting a learning culture at work. Vocational education and training can play an important role in developing better supervisors and trainers and their capacity to facilitate that supportive learning environment.

Introduction

The meat-processing sector is an important part of manufacturing and the largest sector within food processing in Australia. The value added by off-farm processing of beef and sheep meat products is worth in excess of \$2 billion annually, and red-meat processing is one of Australia's largest rural-based value-adding industries (Meat and Livestock Australia 2007). The meat-processing sector as a whole employs more than 50 000 people (ABS 1992, 2008a) working in around 300 establishments of varying size across four main sub-sectors: abattoirs, smallgoods, retail, and food services.

The meat-processing sector has undergone considerable growth in the last three decades, despite fairly stable domestic demand, and one consequence is that the export market is now the largest outlet for Australian processed meat and meat products. The export market remains the key to the future growth and viability of the sector. The meat-processing industry is a mature one, with medium capital intensity and low-to-average uptake of new technology. It has relatively low profit margins, despite there being fewer but larger plants and fewer companies in the industry.

The ongoing challenge for the sector is to continue to improve productivity and quality so that the industry maintains its international competitiveness (Jahan 2004), especially as the sector is increasingly competing with lower-labour-cost countries like Argentina and Brazil. The industry has been notoriously difficult to automate. (Meat processing is essentially a moving dis-assembly line but with the unit of production—livestock—having variable size, weight and other characteristics being processed on the same line.) It is also an industry with a reputation for what Chicago School sociologists have earlier termed 'dirty work', and now draws labour from pools without much formal training and/or paid labour experience. The workforce is characterised by high turnover and relatively low skill requirements. A defining feature of the industry is that the nature of the work performed in meat processing remains labour-intensive¹ and often physically quite demanding.

This report addresses the skill formation and utilisation implications associated with the current structure and trajectory of the red-meat-processing industry in Australia. The meat-processing industry represents a new port into (or back into) the paid labour market and is currently characterised by low status and high turnover, but where demand for the sector's main outputs are increasing. The sector therefore allows a focus on the role of VET (both on- and off-the-job) in equipping people with skills to initially become productive employees, and later in improving their productivity through better skill formation and deployment.

In the first section of this paper, a skills ecosystem model (Finegold 1999; Buchanan et al. 2001; Watson et al. 2003) is used to assess the state or 'health' of the conditions in which skills are developed and deployed. In the second section, the key findings arising from four case studies of red-meat-processing workplaces in Australia are presented. These findings provide a greater understanding of how changing structural and organisational conditions alter the nature and extent of VET training needs and the range of innovations that are occurring in response to the industry's many challenges. The final chapter draws out the VET policy implications of our analysis.

¹ The Australian Meat Industry Council (2008) estimates that labour costs constitute about 50% of total processing costs.

Ecosystem model analysis

This report is part of a wider study on labour supply, workforce development and the role of training in improving workplace productivity and which aims to enhance the understanding of the current and potential role of VET in the labour market and in the workplace (Evesson et al. 2009). The findings from the first stage of the research program established that the impact of VET is shaped by four domains of social and economic practice: the nature of the core service or product being provided by industry; the context in which the relevant skills are being used; how and from where labour is sourced; and the formal training services being used.

- ✧ *Domain 1:* the nature of the product or service being produced. This relates to the character of the activity to which labour is engaged. If the product or service produced is of an elementary nature, this has implications for skill that are very different from output of greater complexity or quality. This in turn has implications for VET in potentially boosting relevant labour supply and workplace productivity.
- ✧ *Domain 2:* the setting in which labour is developed and deployed. This covers the elements making up the ‘ecosystem’ in which skills are formed and used.
- ✧ *Domain 3:* the nature of the labour supply. These are the flows and pools of labour drawn on or potentially able to be drawn on to meet workplace requirements.
- ✧ *Domain 4:* the formal training services being used.

The current paper focuses largely on domains two, three and four of the skills ecosystem framework.

A skills ecosystem model (Finegold 1999; Buchanan et al. 2001; Watson et al. 2003) is used to assess the state or ‘health’ of the setting in which labour is developed and deployed (that is, Domain 2, above). Bretherton (2009) developed a version of this model that includes seven structural and organisational preconditions for skill growth (or atrophy). Reflecting on developments in the community services and health sector, they propose that it is critical to understand the following—separately and together:

- ✧ perceptions of customer needs
- ✧ the employer ownership profile
- ✧ the funding model shaping the level and types of resource flows in and through the sector
- ✧ employment structures
- ✧ job design and perception issues
- ✧ employee receptiveness to train
- ✧ organisation of professional/industry groups.

Nature of product and perceptions of customer need

Global industry trends and Australian meat exports

During the economic boom that followed the Second World War, the red-meat industry underwent significant growth in Australia and globally. Rising prosperity saw growing per capita consumption

of red meat and growth in global demand. But by the late 1960s, growth began to slow and global over-capacity became evident (ABS 2009; Knudsen & Hansen 2008). Advances in agricultural practices/productivity, containerisation and refrigerated transport had the effect of increasing supply and broadening markets, transforming meat processing from a mainly localised industry—where production, processing and consumption occurred within fairly close proximity of each other—into a mainly international industry with increasing disaggregation between production, processing and consumption. The conditions of global overcapacity that emerged in the late 1960s took nearly two decades to work through, and during that time the Australian industry underwent a series of important transformations. It emerged from the period as a leading global meat exporter and managed to avoid most of the disease and meat contamination scandals that affected many other large producing nations. That restructuring has, however, seen significant changes in the meat industry value chain dynamics, from a processor-dominated to a buyer-dominated supply chain (Rafferty, McDonald & Briggs 2009). During that time also the nature of work, skills formation and working conditions have undergone some important changes.

While domestic demand for red meat in Australia has levelled off, international demand has increased over the past 30 years due to decreasing tariffs and freight costs and improved affordability (increased income per capita), especially amongst South-East Asian and Middle Eastern countries. Fresh and frozen exports increased across the same period (1998–2008). Over that period, bone-in exports of beef and lamb increased by 346% and 301% respectively, while bone-out exports of beef and lamb increased by 170% and 1644% respectively (ABS 2009). Over the same period, exports of pork meat increased by 561% (ABS 2009).

It is now also clear that the sector's international orientation is locked in. The future prospects of the industry in Australia will be determined largely by its capacity to maintain or improve its competitiveness compared with other key international exporters.

While most meat exports are processed, there has emerged a significant market for live sheep and cattle exports. In particular, there has been a rapid increase in the export of live sheep and cattle, largely to South-East Asia and the Middle East. While the export of live sheep has remained stable over the past 20 years, the export of live cattle increased by over 1300% from 17 600 in 1988 to 227 000 in 2008 (ABS 2009). The export of live cattle is likely to continue (and probably increase) as the financial viability of doing this becomes more favourable. In the 1980s, it was reported to be possible to ship cattle live and process it in Singapore for the same cost as processing it in Australia, then shipping it to Singapore (Industry Commission 1994), and it seems likely that the financial viability of this process has improved since then (tariffs and freight costs in real terms have declined). Further, this trend has led some industry observers to conclude that, in the absence of change, such a business model could replace meat processing in Australia (Confidential informant 2008; National Meat Industry Advisory Council [MINTRAC] 2009b).

While Australia has emerged as one of the largest meat exporters in the world, other countries such as the United States, Canada and Argentina have also been expanding their export markets. International competition has intensified and is likely to continue. Future growth opportunities (customer demand) for Australian meat are most likely to come from South-East Asian wholesale buyers, who prefer to receive lamb as a processed product (with the bone out), the Middle East (where establishing good reputation and relationships can often take time), and live exports, especially cattle (processed at destination).

Rising international demand for meat has reshaped the nature of demand for meat processed in Australia for export in both quantitative and qualitative ways. Export markets generally involve larger orders, with often quite short lead times (including logistics), and this generally requires much larger-scale production units to meet such orders. This has added pressure for industry consolidation in terms of the size of individual plants and ownership of multiple plants. Also, different countries require different cuts of meat and compliance to particular standards about how meat is slaughtered. For example, Japanese consumers prefer cuts of meat not typically consumed in Australia, often with a higher fat content in the meat, as well as higher levels of food safety and traceability. Muslim

countries require meat to be slaughtered in an halal (permissible) manner, which includes killing the animal by hand and ensuring that all blood is drained before the animal is consumed. Domestic changes have also been observed. Increased health consciousness and the need to reinvent ‘meat’ have led to the introduction of new (often trimmer) cuts of meat. The preceding changes in international and domestic demand have altered meat-processing roles by giving rise to the need to acquire greater ability in identifying and processing a wider range of cuts of meat, as well as the capacity to switch between these different cuts on a daily (sometimes hourly) basis.

Employer ownership profile

One response to increased competition in the livestock and meat-processing industries has been a process of consolidation and concentration, and this has occurred in a number of phases over the last three decades. Worldwide, the number of meat processors has declined, while the size of those remaining has typically increased and is often accompanied by processes of vertical integration as well, such as ownership of feedlots, and marketing and logistics operations (Hayenga 1998; Nguyen & Ollinger 2006; Kandel & Parrado 2005; Knudsen & Hansen 2008).

In the US, there have been several waves of mergers since global over-capacity challenged the viability of many establishments in the late-1960s. A burst of mergers and acquisitions was seen between 1977 and 1982 (Nguyen & Ollinger 2006), and between 1980 and 1995, the number of meat-processing firms fell by over 50%, while the percentage of slaughter volume accounted for by the top four firms increased by 50% (Hayenga 1998).

Consolidation has also been occurring in Australia, and between 1980 and 1995 the number of meat-processing plants declined by 35%, from 475 to 310 (Productivity Commission 1998). By 2009, it was estimated that this number had fallen by a further 30% (Australian Meat Processor Corporation 2009). Merger and acquisition activity accounts for a large part of this decline, in addition to drought-induced closures, the closure of almost all publicly owned plants (deemed to be inefficient and receiving exemptions not enjoyed by commercial competitors) and from the imposition of stricter hygiene standards (Meat Research Corporation 1997).

According to recent statistics, in 2006 the top 25 processors in Australia owned 51 abattoirs and accounted for 77% of Australia’s red meat-processing output. The geographic spread of these plants was mostly along the eastern part of Australia (14 were in Queensland, 12 in New South Wales, and 11 in Victoria). The remainder were in South Australia, Tasmania and Western Australia. The abattoirs were of varying sizes and capacities (Australian Bureau of Agricultural and Resource Economics 2009).

In contrast to a halving of the number of Australian meat-processing plants in the past 30 years, the number of employees in the industry has remained relatively stable. Fewer plants with larger average workforces suggest that the average size of meat-processing plants in Australia has increased (due to both larger plants per se and the introduction of multiple shift systems). This is confirmed by the increase in the average output of meat-processing plants in Australia (from an average of 4.4 kilo tons in 1972 to 7.5 kilo tons in 1990) (Industry Commission 1994).

A clear shift from collective-domestic ownership toward private-domestic and foreign ownership is also evident, and a common thread between all ownership forms has been a keen eye to strategies to maximise value-added and minimise costs along the (increasingly internationalised) processing value chain. Between 1966 and 1996, the number of Australian-owned export establishments fell by 51%, while the number of foreign-owned increased by 77%, the number of public-owned establishments fell by 80%, and the number of producer cooperatives fell by 75% (Productivity Commission 1998). The ownership profile of the industry has now consolidated around two discernable types: multinational and family-owned (listed or unlisted) corporations.

Increasing private and foreign ownership of fewer, larger plants has had an impact on the way meat-processing skills are developed and deployed in Australia. Large multinational firms often attempt to gain a competitive advantage via economies of scale and cost control, and because labour costs represent a significant proportion of total processing costs (around 50% in some cases), reducing labour costs and increasing efficiency have been typical strategies and tactics for achieving this end.

One consequence of the growing presence of international firms has been that existing national or regional settlements between workers and employers have been challenged. This increased focus on labour practices and unit labour costs has been evident through several strategic initiatives by employers to change work practices and the general industrial balance of power in the industry (O'Leary 2008). Jobs have also tended to become increasingly specialised, with workers trained for individual tasks rather than for whole skill sets. Often this has meant that jobs have been deskilled and become more monotonous.

With management gaining greater control over 'the chain' after several years of bitter industrial struggle, control over the pace of production was slowly lost from labour and passed to machinery and management. Previously, slaughterers held much of the power within the slaughterhouse and key parts of the processing system (Productivity Commission 1998). In so doing, they governed the speed of production for workers in other stages of production. This power also created bargaining capacity with employers. However, with the systematisation of the chain, and especially in wresting local control over its speed from unions and key groups of workers, the speed of many stages of production could now be controlled (and increased) with precision and predictability. In addition to an increasing focus on getting a more regular supply of livestock inputs and the addition of shift-based production, it has been possible to build in economies of agglomeration (and scale) and increase output at the larger processing establishments in particular.

Funding model (economic flows)

It has already been established that meat processing is typical of many mature industries—demand (at least domestically) is stable, enterprises have become fewer and larger, profit margins have declined, earnings growth has become harder to achieve and more volatile in nature, and competition has intensified. These factors tend to limit investment to that which is required to maintain existing operations, meet regulatory standards, or grow incrementally, for all but the most profitable/innovative firms.

Within such an environment, firm-specific strategies such as mergers and acquisition, levels of process technology, vertical and horizontal integration, product development investments, and marketing, as well as relationship strategies (relations with retailers, suppliers, access to raw materials and distribution costs) seem to be the most successful ways for meat-processing firms to expand (Strandskov 1999a, 1999b).

Australian Bureau of Statistics (ABS) data indicate that between 2006 and 2007, the profit margin for the meat-processing sub-sector was 1.7%, around four times lower than the profit margin of 8.1% for all manufacturing sub-sectors combined (ABS 2008a). Another indicator of profitability is that, of the 142 manufacturing sub-sectors, meat processing was ranked 11 from the bottom for profit margins. While food processing is generally an industry with relatively small margins, poultry processing (a near competitor) had a profit margin of around 50% higher (that is, 2.7%) (ABS 2008a). Historical data for meat profit margins reflect the fact that this trend is not temporary—2.1% in 2001–02, 2.4% in 2003–04, and 0.7% in 2005–06. By comparison, profit margins for poultry processing over the same period were around three times higher on average (3.8% in 2001–02, 7.1% in 2003–04, and 4.4% in 2005–06). Data on earnings before interest tax depreciation and

amortisation (EBITDA²) from the ABS confirm that earnings growth has tended toward an unstable equilibrium (for example, \$293 million in 2001–02, \$350 million in 2003–04, and \$226 million in 2005–06) (ABS 2008a).

Capital expenditure by the sector has also remained relatively stable but with a slight upward trend, although a longer period of time is probably needed to make an accurate assessment of this, given the nature of capital expenditure horizons (\$195 million in 2001–02, \$232 million in 2003–04, and \$270 million in 2005–06). There has been little change in the level of capital expenditure on land or intangibles, with most change being driven by the purchase of plant machinery and equipment (most likely replacing machinery for existing operations, although some new labour-saving technology has been introduced). Interest coverage³ also provides a measure of investment sentiment. Interest coverage for meat processing is low, indicating low levels of borrowing to fund growth and expansion. It was 5.8 in 2001–02, 7.0 in 2003–04, and 3.6 in 2005–06. By comparison, poultry processing had higher average levels of interest coverage over the same period (5.1 in 2001–02, 10.0 in 2003–04, and 8.0 in 2005–06).

Capital expenditure in meat processing remains low to moderate in most major meat-processing nations (including Australia) because the process is difficult to automate. Processors tend therefore to rely heavily on labour rather than on machinery. For instance, a 1994 study showed that labour represented nearly 50% of total processing costs in Australia, while depreciation on plant and equipment represented around 3% of total processing costs (Industry Commission 1994).

The trends we have identified in the Australian processing sector seem to be shared across many countries. A 2001 report on the beef market in the European Union found similar attributes of a mature market—stable demand, a trend towards fewer larger processors, and the shift toward buyer-dominated value chains (Nielsen & Jeppesen 2001). Denmark is a major exception here—large meat-processing plants in Denmark have developed far higher levels of market concentration (five beef firms account for around 90% of cattle processed) and they are able to utilise more integrated, automated machinery across the whole production process (from slaughtering to processing) (Nielsen & Jeppesen 2001). Low levels of labour are deployed relative to final output, and typically this is for monitoring machines and industrial processes (rather than manually processing meat).

While automation has the ability to transform the nature of the work and skills required in the Australian meat-processing industry, it seems unlikely that the investment required in such machinery will generate a sufficient return to justify the risks of a large-scale shift to a totally new production process. In the main, the Australian meat-processing industry seems more likely to maintain the status quo of attempting to increase profits by reducing costs, and this includes driving real unit labour costs lower (pay relative to productivity) and increasing productivity via more efficient work practices (such as increasing the pace of production and the specialisation of tasks). These trends, however, may have the effect of making the work less attractive and the industry more susceptible to ongoing high levels of staff turnover. In the context of the labour shortages that have emerged in Australia and are likely to return, due to, among other things, the mining boom, this is demanding that managers give attention to the quality of workplace supervision, training and workplace culture.

² Earnings before interest tax depreciation and amortisation (EBITDA) is a measure of earnings generated by a business entity. It removes non-cash deductions (depreciation and amortisation) and the costs of financing the entity (interest) to allow more accurate comparisons of underlying performance across entities and industries.

³ Interest coverage is a measure of the ability of a company to repay the interest on its debt. It is calculated by dividing earnings before interest and tax (EBIT) by interest. The lower this number, the lower the amount of borrowing (interest) the company has relative to its earnings.

Employment structures and job design

The previous sections established that, from a number of directions, meat processing has increasingly come to face an overriding pressure to control costs. Within most meat-processing plants, cost reductions have been achieved by changing the nature of work (toward a Fordist dis-assembly line) and the terms of labour (the end of the old tally system) and by moves toward increasing job specialisation (deskilling). In short, by introducing more but longer shifts, replacing some labour with automated machinery, making work increasingly task-based and by lowering wages in relative terms, the industry has been able to cut unit labour costs (Kandel & Parrado 2005; Esbjerg & Grunert 2008). Understanding how work in the industry has been transformed can be assisted by considering change along three important directions:

- ✧ technological
- ✧ industrial
- ✧ seasonal.

The industry has undergone a long-term redesigning of work practices, from skilled gangs of butchers who dressed a whole carcass at a time, to ‘on the rail’ chain boning and slicing, where the tasks and speed are driven by the chain (overhead conveyor belts). As Stewart (2002) for instance notes over time, ‘... “one man one carcass” had been replaced by “one man one cut” ... with all of the industrial relations problems associated with such production systems built into its design’ (p.192). The consequent deskilling of work has seen the work move from a trade-based occupation (industrial butcher) to a more generic process worker model. Despite several attempts to increase skill development and training (such as the National Meat Industry Advisory Council’s industry packages) and more regional attempts to build workforce development (such as the South Australian Meat Recruitment and Retention Program), there is resistance to work and skill-formation approaches that tend towards trade-type occupations.

Associated with the shift to a task-based and process-driven production system have been increasing employer attempts to dismantle the earlier industrial settlement between labour and management, best exemplified by the ‘tally’ system—a set of local agreements that linked working time, pay and output. The resultant series of often bitter and protracted disputes initiated by employers, but also often with the intervention of the state and the National Farmers’ Federation, changed the balance of power between labour and management and eventually broke the back of worker control of production (Kittay 2001; Briggs 2006).

An Australian meat-processing worker describes typical changes that have occurred to the job and its conditions since the 1980s:

The company stopped the practice of rotation so that you had to spend a large degree of your time performing the *same task* ... everything was controlled by the speed of the chain over which the boners had no control ... [But] if everything went well we could be out in around 6 hours and 15 minutes ... the *money was good* ... We started and finished early which left most of the afternoon for social activities with our friends and families ... the things that *used to be rewarding* about being a meat worker are often no longer applicable. The industry is now competing [with the mining and other processing industries] for jobs that are much more autonomous and pleasant to work in ... the *hours for each shift are no longer short* ... in many cases they are very long due to a *reduced number of shifts* per week. We have taken out all the *incentives that used to apply* and continued on our path of making the job *less autonomous and less complex*.
(National Meat Industry Advisory Council 2009a, emphasis added)

Another response to increased competition has been the effective relocation of meat processing from cities to rural and outer-urban areas (Melton & Huffman 1995; Kandel & Parrado 2005; Stull & Broadway 2004). While this has reduced land costs and transport costs between livestock producers and meat processors, it has had the paradoxical effect of reducing much of the earlier supply of meat-processing labour, because task-based meat-processing work with long fixed shifts

and relatively low pay is no longer as attractive. Labour pools in general are shrinking in rural areas as the urban-transition process continues to draw more people towards larger cities, and potential flows of labour to processing sites are constrained due to the (perception of) relatively limited services, amenities and other opportunities offered in many rural towns and cities (Kandel & Parrado 2005). The ongoing seasonality of meat-processing work, but more recently its exposure to the effects of drought and periods of over-capacity, and the consequent ‘casualisation’ of the workforce have had the further effect of decreasing the notion of meat-processing work as a career in rural areas, especially with the growth of labour demand from mining-related activities.

Once again the interaction between changing job design and increasing turnover in meat processing has been observed in other countries. In the US, for example, increasing specialisation and task orientation have also been accompanied by higher turnover rates, which are now estimated to be in the range of 72 to 96% annually (Gouveia & Stull 1995).

Higher turnover and the increasing difficulty of attracting labour have seen meat processors exploring other pools of labour than the traditional local, young white male labour population. A common response to filling labour shortages in many major meat-processing countries has been utilising foreign labour with little formal education and from a non-English speaking background (National Meat Industry Advisory Council 2006). For example, in the US, there has been a rapid growth in the employment of Hispanic labour, sometimes from people who have crossed the US border without official consent and documentation (Kandel & Parrado 2005; Kandel & Cromartie 2004), while in Australia many employers have relied on 457 and 417 visa holders (National Meat Industry Advisory Council 2006). However, with the recent tightening of immigration policy in Australia, it appears that the availability of 457 visas may begin to decline in general, and this may lead to further labour shortages in the Australian meat-processing sector. How this risk to labour supply is managed remains a significant issue for meat processors.

Over the past 30 years, the number of employees in the meat-processing industry has fallen by around 40%. There were nearly 50 000 meat-processing employees in 1977–78, but only 31 206 by 2007 (ABS 1992, 2008a). Historically also, remuneration in this industry has been based around low-to-medium annual but seasonal income streams. The seasonality of work has declined, but so has pay, relative to other occupations (at least for adult employees), especially since the early 1990s. An industry-funded study in the early 1990s suggested that Australian labour costs (accounting for around 50% of total processing costs) were too high for Australia to remain internationally competitive (Booz Allen Hamilton 1993) and this led to several strategic industrial disputes that saw the removal of the old tally system and the breaking of control over working arrangements and the length and number of shifts.

Historically, there was typically only a single daytime shift that began around 6.00 am and lasted for six to seven hours (or when the tally was completed), with additional payments (overtime) for processing more than the tally. There was usually no weekend work and a ‘short Friday’ was customary (around half a day’s work). However, these benefits have slowly withered, with multiple shifts of longer duration now being the custom.

According to Hall and Lansbury (2006, p.582), despite the gamut of approaches taken to address weaknesses in skill formation including ‘... “user choice”, flexible traineeships, workplace based training and competency based training’, employers still often report skill shortages. As noted above, one of the most notable industry responses to the labour shortage has been to use temporary migrant labour. According to the Australian Meat Industry Employees Union (the AMIEU), it currently has around 1000 members who are on 457 visas (temporary work visas for skilled workers), and the union estimates that in Queensland alone there might be around 2000 foreign nationals in the industry (in 2008, the workforce was 1647). There are, however, a number of other initiatives among meat processors aimed at increasing labour supply, including programs to increase participation by Indigenous, high school and women workers.

Lastly, the industry has made many attempts to reduce the seasonality of meat processing and increase capacity utilisation, with vastly improved transport logistics, the growth of feedlots, and new livestock-purchasing arrangements being ways that security of supply has been improved.

Employee receptiveness to train and organisation of training arrangements

It is now widely acknowledged that the lack of workers (and, according to employers, appropriately skilled workers) is a major constraint facing the industry. Jie and Parton (2009, p.267), for instance, conclude a recent study with the following observation:

Analysis of beef supply chains in Australia revealed that the critical issue affecting their operation is a lack of appropriately skilled workforce.

Given the (limited) nature of skill requirements to begin working in the industry, it might be better to frame the issue in terms of a tension between the labour supply and utilisation. The notion of a skills shortage therefore has a particular meaning in meat-processing work. The industry faces more or less permanently high turnover of labour, and mostly uses workers with little or no post-secondary education. This tends to dictate a particular approach to initial training (short induction and then on-the-job training for particular tasks). In a similar way to the meat industry in the US, Canada and Denmark, there appears to be an increasing preference for training and education to be conducted inhouse in Australia, with a number of companies, particularly the larger ones (for example, Swift and Fletchers), becoming registered training organisations (RTOs) and offering lower-level courses on site. It would seem that as companies become larger, and this is a worldwide trend in meat processing, it becomes more viable for them to employ full-time staff dedicated to in-house training functions.

Data on the number of TAFE (technical and further education) providers offering meat-processing training courses seem to support this observation. Between 2004 and 2008 it was estimated that the number of TAFE providers delivering meat-processing courses declined by over 30% (National Meat Industry Advisory Council 2009b). In part, this gap may have been filled by processors themselves becoming registered training organisations, along with a number of private providers. Further, it is hypothesised that, as remaining processing sites tend to be in rural areas or on urban hinterlands, any demand for TAFE training that remains is also likely to shift away from metropolitan TAFE colleges towards those in rural areas.

For those workers who stay in the industry, most enterprises have developed quite tight internal labour markets. This means that most supervisory and management personnel (and even maintenance trades) have come off the production line, giving them a unique insight into the day-to-day operations of the plant. That these people have been supported to take up often significant challenges of learning new skills in technical areas (hygiene, cold storage, logistics, electrical and plumbing trades etc.) and management is a testament to this culture of supporting long-term employees. This internal labour market can however present a challenge for the transmission of innovations and ideas from outside the sector in agri-business and more generally. One challenge for management training will therefore be how to get younger managers to mix with and establish a dialogue with managers outside the meat-processing sector.

A number of historical reasons have been cited for a general lack of interest in training in the meat-processing industry. These include: workplace culture (where you learn on the job via the 'school of hard knocks' rather than via formal training); daily hire and seasonality, which limited the willingness of employers and employees to commit to long-term training opportunities; high levels of turnover, which reduces incentives to train; seniority system of promotion, where skills and training are rewarded less than experience; and the tally system, where quantity of output is more important than quality (Productivity Commission 1998). While the impetus for some of these

historical reasons have been removed (for example, the tally system is far less commonplace now), a culture of undervaluing training is likely to remain to some extent.

Employee and employer organisations

The meat industry does not share the characteristics of many sectors (especially in business, health services sectors, and some building trades), whereby some professional/occupational groups play a role in accrediting qualifications and representing occupations in terms of their professional/technical/craft interests. The key group representing most occupational groups in the industry is the Australian Meat Industry Employees Union, which has traditionally been an industrial union. However, after a series of bitter industrial battles in the 1980s and 1990s, both union and employer groups have begun to collaborate much more systematically on training issues in order to both promote the industry as a career and address some of the legacies of the earlier adversarial employment relations and the transition to a task-based work process. While much innovation is evident at the site level, the most notable development in formal training systems has been through the National Meat Industry Advisory Council (MINTRAC), in which both employer and employee representatives have made significant contributions. Indeed, it might be thought that a shared and collaborative emphasis on training and its institutionalisation through this council represents an important part of the post-tally industrial settlement in work organisation, industrial relations and skills. (See appendix 1 for descriptions of the various institutional bodies in the meat-processing sector.)

Summary

A skills ecosystem analysis of the red meat-processing sector has revealed the scale and breadth of changes that have been occurring. These changes have transformed Australia's integration into the global meat industry, radically altered industry supply chain dynamics (from a processor- to a buyer-dominated chain), and resulted in a much more concentrated and vertically integrated processing sector. Taken together they have also placed increasing pressure on processing costs and logistics arrangements, as well as demanded increasing hygiene and animal welfare standards. These changes are interacting to alter the context of meat-processing work, the skill requirements of work, and the role and forms of delivery of training. The changing nature of meat-processing work is also changing the sorts of people undertaking the work and how long they stay in the sector. The industry now employs a diverse group of workers, many of whom are by their nature transitory, but the sector has had to get used to permanently high labour turnover. This has naturally changed the sorts of demands placed on training systems and we have seen increasing investment in training in the sector, more of it geared to on-the-job, task-oriented work, conducted by both in-house registered training organisations and on-site VET providers. An important development in recent years has been attempts to change the culture and content of supervision and on-the-job training. This is in part a response to the new needs of managing a workforce from diverse backgrounds with different levels of English language proficiency in a challenging commercial environment. In part also, it represents an evolution in employer attempts to retain workers by providing a safe and supportive workplace. While this is a sector that has undergone skills atrophy in moving to a task-oriented process model, there are signs that this phase has reached certain limits. And given that the sector now employs many people who have little or no post-secondary education and often little recent experience in this sort of work, there seems to be potential for the sector to undergo some degree of skills growth.

Workplace dynamics

To understand how skills and training are responding to and in turn impact upon and reflect workplace performance in meat processing we studied four worksites in detail. This section reports on the methods used to obtain data and why we selected the sites, and then outlines the substantive findings to the following questions:

- ✧ Who works in meat processing, and why?
- ✧ How are jobs designed, why and what does it mean?
- ✧ How are training, supervision and workforce development approached?

Case study methodology

The notion of ‘best practice’ is a somewhat vague concept. Typically, there is no single indicator of best practice and it is difficult to isolate the individual effects of multiple indicators/attributes. Further, consensus can be lacking, even amongst experts, over what the indicator(s) of best practice are, or should be, in the first instance. In selecting the meat-processing sites for analysis it was decided to focus on those that have flourished in a highly complex and competitive environment. Understanding the dynamics of successful firms and sites was seen as important for understanding how VET arrangements contribute to desirable economic performance. For the purposes of the meat-processing case studies, best practice was operationally defined as: *activities that have enabled a firm to adapt to, and survive in, an increasingly competitive business environment where labour is difficult to recruit and retain.*

The steps and rationale for selecting sites were:

- 1 Key informant interviews and literature reviews suggested there were differences between the beef- and lamb-processing industries, in terms of the nature and extent of challenges they faced. We therefore decided it was important to look at each industry. Hence, two beef-processing sites and two lamb-processing sites were selected.
- 2 Key informants and existing research suggested that export-oriented firms were more likely to be leading, or at least up to date with, the latest work and management practices. This stems in part from the additional accreditation and auditing requirements and the extra pressures from on-time delivery of cost-effective, large-scale orders.
- 3 We looked for firms that have adapted and survived. A good proxy for this was to concentrate on the larger firms that have grown in number of employees and/or plants within Australia in recent years.

In the beef industry, we were successful in recruiting two of the largest firms in Australia. The additional advantage of these two cases was that both firms were located within the same broad geographical area (and therefore tapped into the same labour pools). Any substantial differences in ability to recruit and retain staff between the two firms may therefore be a result of initiatives within the firm, rather than the local labour market.

In the lamb industry, we were successful in recruiting one of the largest processing firms in Australia. Further, industry experts suggested this company had been one of the most active and

successful in attempting to solve recruitment and retention problems by using various ‘innovative’ approaches to training, job design, and workplace design. This company has two plants in different states. Comparing these would also provide useful information.

The ownership structures and business models of each of the case study sites are described in appendix 2.

In undertaking the case studies, semi-structured interviews were conducted with a vertical cross-section of workplace members (see table 1). This enabled us to obtain a balanced view (worker perspectives and management perspectives) and allowed us to cross-check (validate) data provided by informants.

Table 1 Case study interviewees by site and role

	Site A	Site B	Site C	Site D
Plant manager	1	1	1	1
HR manager	1	1	1	1
Training manager	1		1	1
Production manager	1			
Supervisor/trainer	1	1	1	
Union delegate	1		1	1
Experienced workers	1	2	2	1
Newer recruits	2	2	2	2
Total	9	7	9	7

Who works in meat processing and why?

From the literature reviewed and the analysis of the transformation in the work and workforce in the meat industry, we noted how there had been a shift away from a militant, male, seasonal, but locally based, workforce (which bargained around output and hours), to a more permanent but high-turnover workforce (which is process-driven and includes a much more diverse group of people). These groups include young people new to the labour market; people re-entering the workforce, typically male but with increasing numbers of women in some sites; Indigenous people in rural towns living close to the processing site; and overseas workers and travellers (for example, grey nomads, working holiday visa holders, 457 visa holders). These workers tend to have limited post-secondary education and tend to flow through meat-processing sites at high rates. Managing both the flows of workers and this diversity of labour supply, along with the training demands associated with this, have presented important new challenges to meat-processing sites over the last decade and half.

From the case studies, it was possible to distinguish between two broad types of meat-processing employees in terms of their job tenure and/or intention to remain in the industry:

- 1 longer-term or ‘career’ meat processors—those workers who have made a career of meat processing and/or who intend to remain in or around the industry for some time
- 2 temporary or transitional meat workers—those who plan to work in the meat-processing industry for a limited amount of time only.

Career meat-processing workers

Across the four sites, there appeared to be four common reasons why longer-term (‘career’) meat-processing workers seemed to work where they did: the work provided good income for the skills they had; it was in close proximity to where they lived; the work was not too stressful; other family members had worked for the company or in the industry.

1 Good income for the qualifications and skills I have

I come to work for the money first off. I've got a family to look after ... we try and help the younger kids coming in to try and keep them here ... it's important that we work together and do the right thing ... If I left here, I would never make what I make here (A).

It's a special kind of person that stays here ... someone who's flat out doing grade 10. They know they're not going to get much else, they turn out [to be] our best workers (C).

I'm 19... I thought about being a lawyer but didn't think my grades were good enough ... without having a qualification or a degree, its good money (B).

2 Allows me to live in the area

Working on the drill rig was hard on my family life. We chose this job because you've got your set hours, you can go home to your family at the end of each day, and that was the big benefit over working up in the mines (B).

It's close to home, the people here are good (C).

3 Low stress

I'm not money focused ... I just come and do an honest day's work. I can go home and not stress about anything ... the further up the chain you go you start taking work home (C).

It's a no stress job, that's what I like most about it, I walk in, do my work, I walk out ... prior to this I've owned a business, worked for others, didn't like it (A).

4 Family connection

I'm 46 now (worked at the abattoirs since I was 15) ... when I was growing up the sons followed their fathers and that sort of thing. My grandfather worked at Homebush abattoir, my father was a shop butcher and my uncle was a shop butcher, I worked in the abattoirs, my brother worked in the abattoirs, now my son, he's a butcher (A).

A lot of the time husband and wife work here together and then their kids will come and work here as well ... there's a lot of that (C).

These reasons for working in meat processing were not cited equally strongly at all sites. In the regional sites in particular, the ability to remain living in the region was particularly important (especially for workers with children), as was having regular work. Some also said they worked where they did because they liked their job and their workmates.

1 Provides regular work in an area with high levels of causal work

A lot casual employment here ... they want something with stability (C).

Was doing temp work, needed employment and was close to home (D).

2 I like my job and workmates

They're treating me well ... there's a new challenge every day, its different each day ... I look forward to coming to work each day, that's why I want to stay on (B).

In our boning room we always had family mateship and get to know new people and hang out after work. We always stick together (D).

Temporary/transitional meat-processing workers

For this group of workers, meat processing was often intended from the beginning, or quickly became, a temporary and hopefully low-stress arrangement while they made other plans, looked for other employment, or were travelling through an area.

1 Marking time until I find something better

A lot of people's rationale was 'Well I can't find work anywhere else, I'll have to work at [Site B] and because of that they're only here short term ... it's a way for them to get money to live until they can find something they really want to do (B).

I wanted to come back to [town A] ... I had some friends who worked here and recommended that if I want a job to come out here and try it ... Don't know if I'll be here next year. I don't plan on staying in town (A).

Other temporary workers were part-timers (such as students on weekends or during a gap year), 417 and 457 visa holders (temporary overseas workers), and Working Australia participants. Being able to earn relatively high income (compared with other part-time jobs) made meat processing an attractive option for students; meat processing does not seem to be low-paid work for young people compared with other options in retail and fast food establishments.

1 Meat processing is good pay for young people

We get a lot of people doing gap years as well. We've got a lot of people in the 17–19 year age bracket, people who do uni holidays ... it's a good way to make a lot of money quickly and in that way it does appeal to young people. But as they get older we begin competing for the sort of guys you find on the mines and that sort of thing, and that's got a reputation for a lot more money (B).

How are jobs designed, why, and what does it mean?

It has already been established that work in meat processing has become quite task-based. However, across the sites, there was a significant number of initiatives to improve job design. These were generally aimed at both making it easier and quicker to become competent in a job and attracting more people to the industry and retaining them. These initiatives are presented in this section (for example, job rotation, shift times to attract mums and kids), followed by some of the outcomes of them (for example, job rotation means people need to have a broader knowledge of products and tasks but potentially fewer repetition-related injuries).

It is important at the outset to keep these initiatives in perspective. The underlying reality they address is the high level of reliance on manual labour, labour that is overwhelmingly 'non-trades' in nature, with high levels of task specialisation. This continues, despite the fact there has been some labour-saving technological change. Many of the initiatives discussed below are also associated with dealing with the challenges arising from the very high levels of turnover characteristic of work of this nature, and the demands of rapidly inducting workers from diverse backgrounds. Consequently, despite the often genuine nature of the improvements in job design, the challenges of maintaining and improving both labour productivity and the quality of working life appear to be chronic. These arise from the difficulty of, for instance, maintaining sharp knives, the limitations of understanding associated with task specialisation and the ever-present problem of balancing the speed of the line with the need to maintain quality and safety. Before presenting the initiatives, the constraints imposed by the nature of the work are briefly discussed.

Underlying reality of meat-processing work

One of the overriding factors shaping work, skills development and training in the industry is that it is still quite labour-intensive, hard and sometimes dangerous work.

Work in meat-processing facilities is often performed in cold conditions (6 degrees), the work is physically demanding, often repetitive and with shifts that are typically longer than office work (up to ten hours). Processing beef also seems to be physically harder than lamb due to the larger size and weight of the animal and its cuts.

It's not for everybody ... you can't explain to anyone what they're going to go through when they start, because it's such a physical, labour-intensive job, you hurt, they don't actually believe it until they're going home at night and their hands are hurting and their elbows hurting (C).

My fingers are getting so sore at the moment from lifting silversides. After bagging it you've got to lift it and throw it in the box behind you ... they can get really heavy, sometimes 20 kilos ... if the belt is not working we have to double the boxes (stack them on top of each other) ... and I can't do that ... the [other] girls help me (C).

The forequarter end doesn't slide as well as a hindquarter (and weighs 40 to 50 kilos)... after a while dragging them down does fatigue you (D).

Job specialisation was thought to make some roles physically harder and also meant that workers were now less able to help each other. However, specialisation also meant that people with limited skills or English could still perform certain tasks. Specialisation therefore can provide an entry point into the meat-processing industry for these people.

Some of the guys are bending over all day... you can't keep doing those jobs. Look at my hands. That's from grabbing meat all the time. They call it claw hands. Twenty years of grabbing. That's what I'm saying about rotating [it's needed] (C).

With the way we've gone [specialisation] people don't help each other, they stick to their own jobs. You lose that team effort. It has gotten faster, but now we're going quicker for longer (C).

Used to have full rotation but some couldn't do one cut as well as others ... [with a] lot of 457s, it's easy [for them] to learn one cut ... (D).

These constraints on the nature of work and skills development are therefore not about particular employer attitudes to workforce development. As one key informant interviewee noted:

It is a bloody hard way to earn a living ... You can tell as many lies as you like until they walk in the front gate, but at the end of the day we are still killing animals and we are still dressing them and we are still putting them in boxes.

I have seen people try just about everything to keep labour, and I don't know what the solution is, I really don't.

Initiatives to improve job design and skill development

Despite the structural conditions noted above, the way that jobs and workplaces were designed varied according to site. These differences are organised by the main categories of design, work practice and/or skill-formation strategy employed.

Job rotation

While single tasks on a chain was common across all sites, differing degrees of job rotation were in operation at three sites, while there was no rotation at the other (it had been discontinued). At Site B, job rotation was used extensively and was reported to benefit the company and the worker. For the company it was easier to fill any gaps that may arise in the chain, while for the worker there was greater job satisfaction from variety, less repetition (and associated strains) and less fatigue. Managers at Site A identified similar benefits.

We believe in making the job more interesting, that's why we do the intense job rotation ... if we've got 5 people away ... we can grab 5 people out of our boning rooms who have been trained on the slaughter floor who can fit straight in (B).

I reckon our abattoir would be one of the better workforces as far as skill wise goes, some may have people who can do the 1 job better, but our workforce can do every single job on the production floor ... in some abattoirs you don't move at all (B).

When we don't have enough people, you've got to understand, this is all a chain system. If you haven't got the people on the chain it's no good you being there because you can't operate ... and then we have to drop products (A).

Job rotation also occurred at the management level and was typically viewed by management as a way of ensuring there were people who could perform various tasks on the chain if unexpected labour shortages arose (for example, if a worker or supervisor was sick).

Supervisors, trainers and their new staff rotate from time to time ... on a daily basis you will rotate a minimum of 3 times a day. The supervisors in charge of a particular section will rotate their section on a weekly basis (B).

We've got the plant covered between the 3 senior managers. If one of us was away we could cover for them ... The benefit of doing that or promoting within – you know the task you're asking of other people. It also helps you plan and coordinate from a higher level. We've all started on the chain ... everyone starts on the bottom (B).

At Sites A and D, rotation was not as extensive and they did not operate in self-directed work teams, while at Site C rotation had been abandoned in an attempt to increase production speed. Further, while Site D practised rotation, this did not seem to apply to all workers; some were considered not competent to undertake rotation and assigned a single task that they could perform more satisfactorily (for instance, in the case of some 457 visa holders). The different approaches to rotation also affected training because where rotation was practised, there were both greater demands on training and on maintaining records of who was competent to do what tasks on the chain. At Site D, the training manager presented a detailed matrix of workers by shift and what they had been trained to do.

Self-directed work teams

At Site B, job rotation was coupled with a strong self-directed team culture (self-directed work teams were not present at any other sites). There appeared to be a strong emphasis on 'teams' and being or becoming a 'part of the team'. It was also suggested that Site B was less 'hierarchical' and 'more of a team' compared with Site A (although part of the same corporate group).

This self-directed work team approach meant that each team was expected to take responsibility for the quality of their work as a team, and that they would be rewarded (or punished) for good (bad) performance as a team. This also meant that individuals could 'let the team down' and that they would be accountable to their 'team mates':

Real team environment here ... we're multiskilled, and so you learn all the jobs on the floor, you're not stuck on one job (B).

We instil quality expectations on the production chain ... if there are failures on the product ... then that whole section or team of employees do not achieve that particular bonus of the day ... I have to get onto Jack and say wake up to yourself because we all lose that bonus for the day. It's basically self-managed, self-quality control (B).

It needs to be noted that this research makes no finding about the relative merits or demerits of team-based work. One training issue that such work practices probably raises, however, is the increased need for better communication and negotiation skills in such team-based, high-rotation working arrangements.

Designing shifts around available local labour: Indigenous people, mums and secondary school students

Site A seemed to not rely on standard recruitment practices such as advertising and local labour market intermediaries. It also systematically seeks out underutilised local labour pools to improve recruitment. These pools also seem to be people who are likely to be tied to the local area in the short-term at least. Programs have been developed to increase participation from Indigenous people, females and young people. Site A has designed shifts to accommodate the needs of these groups where possible.

The 'kids' shift' is a Friday night shift that runs from 4.00 pm to midnight. It was designed to allow secondary school students (and above) to work at least one shift a week. Meat-processing work can be appealing to young people because they earn higher rates of pay compared with other part-time jobs. Meat processing does not appear to be low-paid work for teenagers. This shift is reported to also appeal to parents because they know what their child is doing on Friday nights.

We've got all these kids coming Friday night ... they come of a night and we get all [the] jobs done. We used to cheat on Friday nights and do the simpler products because we didn't have the labour – the bastards wouldn't come to work. Now we actually do the harder products on Friday nights ... We pay them well, much better than McDonald's ... Mum and dad love it because he's with us (A).

Job-sharing is also possible at Site A, and this is often attractive to students too.

Got a lot of school kids doing job sharing ... on afternoon shift ... might have 3 kids that make up one person's job (A).

The 'mums' shift' runs from 9.00 am to 3.00 pm. Designed to be a subset of the day shift but running across both shifts, it overcomes the problem for a parent of not being able to drop children at childcare before starting a usual day shift (that is, childcare is not open when the usual day shift starts). It also provides an opportunity for a part-time working week. For the enterprise, the mums' shift provided extra labour and the ability to deploy workers during an ongoing shift to areas experiencing a bottleneck or requiring the additional workers.

You can work from 9 to 3. There's 15–20 mums at any one time on the mums' shift. They work within the day shift ... we've been doing it for 2 or 3 years (A).

The other three sites did not offer such customised shifts. They either did not believe it was possible to modify their production processes to allow shorter shifts or to divide longer shifts into a group of smaller shifts. Gaining a greater understanding of how Site A can maintain flexible shifts while others say they are not practical would help to give the industry (and others like it) knowledge of the preconditions for successful operation of flexible shift systems.

Chronic challenges

Technology-focused but still a high reliance on manual labour

Site A appeared to have a strong focus on using technology wherever possible for improving productivity, working conditions and safety.

[We have] ... spent millions of dollars revamping our cold boning room to make it easier ... Different structures [are in place] now... it was done to make everything easily accessible ... better lifting rates ... no overhead lifting (A).

Here it's all done with machines ... you had to break legs off [previously]... we're one of the abattoirs that bring things [new technology] in ... production gets through more easily and quicker ... if they went back to the old way there's no way they'd handle it, the young kids. Putting machinery in, we've gotten quicker. It's not harder its quicker, and more repetitive ... some jobs have been made easier, like our job. They've put a machine to cut the whole back hock off where we used to have a knife cut through the wool, which was harder on your wrists. Briskets and shoulders used to be done by knife manually, now it's done by air knife and it's a lot easier, so you go quicker (A).

However, Site A also acknowledged that lamb processing was likely to remain a labour-intensive industry that could be assisted, but not replaced, by machines.

We can't just buy a new machine. Our industry doesn't work like that. It's a bit like shearing sheep – the biggest improvement they've made in a hundred years is putting an extra inch and a half on the comb. And we've done similar things with the meat industry but it's still manual labour and to make it efficient you've got to have the hands on deck and grab all the products

... we're starting with a whole sheep and tearing it to bits and the more bits we can break it into the more it's worth (A).

It was acknowledged that the role machinery could play in beef processing was also limited and secondary; a high reliance on, and preference for, skilled manual labour remained.

There's a little bit of innovation but not a great deal ... you can get them [robots] to pack a primal into a Cryovac bag, but when you go to do that every primal's a different size ... if you've got a robot packing it one size bag fits all so you have a huge wastage ... got to marry up what's worth it replacing labour or wastage ... Kilcoy was going to be a high tech robotic plant but it failed because one size does not fit all ... sure there's some innovative steps, I know there's a little bit more in the pork industry because your pork is a better line of the same size. But in beef, the variance is too great ... we are a skilled labour force that's going to be around for a while (C).

Lack of skills in maintaining a sharp knife reduces productivity and increases injuries

In all cases, it appeared that maintaining a sharp knife was an essential skill for those who cut meat. This is a skill that is largely acquired through practice on the job. Not having a sharp knife was said to reduce productivity and increase injuries.

One of the hardest parts of the training was getting people to get their knives sharp ... people were getting injuries from the blunt knife ... we introduced company knives. We have the extra company knives [if the individual's knives blunt on the floor], which keeps the production flows going, it reduces 60% of our repetitive muscle and deep muscle injuries, it had more rewards than we expected (B).

A sharp knife makes your day so much easier – less pressure, less risk, and a better product. Anybody with a dull knife, they're going to have a dull day (C).

Lack of product knowledge from task specialisation reduces quality and productivity

A number of informants mentioned how changing customer specifications during production made the job difficult. Different countries require different cuts of meat, labelling and packaging and this was particularly challenging for new employees, and for existing slicers and packers. This was made more problematic by the fact that the number of cuts of meat had increased in recent years, as new export markets emerged. It was also suggested that, as a result of decreased job rotation, workers tended to only learn the cuts of meat that they worked with.

Because I was trying to get used to what each box was meant to weigh, what was meant to go in there, and what every type of cut was called, I didn't know (A).

Putting the wrong label on boxes, putting a label for a shoulder on a leg box, and simple things like that you may not be familiar with (B).

High-speed production may lead to stress, mistakes and compromise quality

Some informants said they were now expected to deal with a wider range of cuts of meat (different customer specifications) at a faster pace, with an increase in errors being a likely result.

The pressure's on the slicers, not so much the boners. They're working. Believe you me. They're working. But the slicers are working hard ... boning hasn't changed for speed ... the slicer and packer is where your pressure comes ... if you're packing meat at 30 pieces a minute – that's speed. You're gunna miss something (C).

How are training, supervision and workforce development approached?

There were many common features amongst the case study sites in relation to how they developed their workers. All shared a deep belief that the best way to learn was through practice on the job. Closely allied to this was a highly developed and increasingly sophisticated approach to relying on supervisors and on-the-job trainers as key contributors to skill development. This approach has been underpinned and elaborated by a sophisticated industry training package developed by the industry training body (National Meat Industry Advisory Council). Despite these strong commonalities there was also a number of notable differences between the sites. The time it took new workers to become competent varied dramatically. This was closely linked to the degree of task specialisation and the extent of job rotation practised at the sites. This meant that, while it is possible to provide an account of what ‘the typical’ approach to induction and training looked like across the cases, there was in fact significant variability between them. Indeed, at its best it is clear that this industry is capable of generating workplaces that set extremely high standards of care and attention to developing their workforce, even though the skill development expectations are not high. This case highlights, however, that genuinely innovative approaches to workforce development require a rare blend of factors. This includes dynamic workplace management, creative intermediaries and government support that build on local initiatives—as opposed to imposing predetermined institutional forms.

The best way to learn practical tasks is through practice on the job

While recognising that some aspects of training were suitable for classroom-based learning (safety, hygiene, OH&S), each site preferred their existing model of mostly on-the-job practical training over other models of delivery. They considered it to be more efficient and effective to deliver practical training on the job, rather than in a class-based setting.

It was suggested that practical training was best provided on the job because people tend to learn the required skills best by watching and doing, and this was even more important when there were high numbers of employees with limited English or literacy.

It would be hard to teach people what they do here elsewhere. It’s got to be on the job ... It would be too hard ... for one you need a supply of cattle and you’re not going to be able to do that, you could get them practising on foam but I think it’s got to be done where the job is (C).

I believe with our RTO it’s job specific, it really pumps it back into the guys straight away ... they walk away and understand what you’ve been talking about. It’s a lot easier for them to go back to the end of the room and relate it back to what they’ve just learnt in relation to their actual task (C).

The reason we are so passionate about training is that we don’t see anyone else in the country who can deliver meat-processing qualifications better than we can ... it’s our core business and what we do best ... we’re not a huge supporter of TAFE. We started with TAFE years ago when the training first started and we just didn’t see it ... didn’t see why there’s people going in there learning what we do out here (A).

A lot of what we do, a lot isn’t tell, it’s show. So if you show them how to do it properly then you can get them going, and most of them have basic enough English skills that you can say ‘No, no, not that way. This way’ ... Language can be a barrier. However, demonstrating a skill, you can go so far with that (B).

Supervisors and supervisor training has played a lead role in reshaping meat-processing culture: from brawn to brains

It is now widely recognised in the industry that supervisors and trainers play a key role in shaping workplace culture, especially in the context of a diverse and changing workforce and without the

level of union control of production that occurred in the past. This was apparent, but with varying degrees of success across all case study sites. A change in culture began only in the past few years, according to some informants. The training of frontline management in supervisory and leadership (such as certificate IV at TAFE) was suggested as an important factor in changing the way supervisors treat workers, and in turn the way co-workers were likely to treat each other. Learning to communicate better with each other also had been particularly useful.

We wanted to have a new culture in the industry, get away from the them and us that had been instilled in the industry by the slaughtermen, I'm a boner, I'm a slicer, you're just a labourer (B).

The trainers and the supervisors are the best we've ever had ... smarter, equipped better, they do cultural diversity training, how to speak to people training, they learn the lot ... I think they're getting something out of it now... I saw that as a huge change for the company, not like the old days ... I can remember 19 years ago, you'd be too scared to say anything to the supervisors ... the supervisors were always the tough blokes, they were always the good fighters on the chain, and they progressed to supervisors because they were the blokes that flogged you after work. And they were the big blokes and everyone looked up to 'em. But them days are gone (A).

The meat industry culture, go back 10 years ago, it was ruled with a stick. Do the job or get out. In the last 5 years, HR has really changed from an IR to a HR ... at this site, 4 years ago, it really changed (C).

Expected time to become competent depends on level of task specialisation

At Site A, new starters are expected to become competent, that is, working on their own without the need for a trainer, in around eight weeks. The workplace trainer assesses the worker for competency in certain tasks. A nationally recognised Certificate II (Meat Processing) is attained after demonstrating competency in a certain number of tasks.

At Site B new starters are placed on 'probation' for 12 weeks and are expected to learn their role within this time period (they are expected to learn ten specific tasks that make them competent at performing nearly every task in the room in which they work). This longer period of training may exist because Site B workers have to learn more tasks as part of their high rotation workplace compared with Site A workers. If the new starter is deemed competent by the workplace trainer and assessor, they are invited to 'join the team', which makes them eligible for higher pay and bonuses.

You're on probation for 12 weeks, during that 12 weeks you'll go through an intense training system where you'll be assessed on a weekly basis under an appraisal each week ... we are training and assessing you on the 10 basic skills that's required in your respective department and at the end of the 12 week period you'll be given a final assessment on whether you'll be offered employment to what we call join the team and joining the team you are eligible to be paid production bonuses (B).

At Site C, the new starter is expected to perform the job on their own in a relatively shorter period than at Sites A and B—around six weeks for boners, three weeks for packers, one week for labourers. This can be expected, given the fact that Site C uses higher levels of job specialisation than Sites A and B. Site C trains their staff to certificate II level (meat processing).

At Site D, new starters are on probation for 13 weeks. Due to the high proportion of overseas workers, interpreters are used on all shifts. Some job rotation occurs and boners tend to rotate more than slicers. One informant said rotation was not provided for some workers, who learned a single cut of meat only. Usually, these workers who were not proficient at certain tasks were temporary workers such as 457 visa holders. From the available accounts it seemed that for single-cut roles (no rotation), it was expected that these would be learned in three weeks.

The work was easy to pick up (it took a few weeks) but [it was] not until I could speak English properly that I felt settled [and now I am a trainer] I got 3 weeks to show how to do the job and steel their knife, and if not OK we give them more training (D).

Typical induction and training programs and the leading edge

Three of the four sites—A, B and C—were registered training organisations. Site D had a TAFE provider on site. All sites had programs in place for inducting and training new staff members (with an emphasis on on-the-job training and assessment, learning from buddies etc.) but different lengths of time in which these new starters were expected to become competent. (Higher levels of training are generally required when there is a high level of job rotation.) Some sites employed ‘walking’ trainers, in addition to supervisors. Typically, workers were trained to certificate II level within three to six months, and to certificate III level by 12 months.

A typical induction for new starters is as follows.

A one-day formal induction is conducted in a dedicated training facility on the site, after which the person begins working in production (typically as a labourer). Most training is then undertaken on the job, using a buddy system overseen by workplace trainers/assessors. Each department usually has a trainer/assessor and a back-up trainer/assessor, plus at least three supervisors. These people are often trained to certificate IV level or attain that level after some time in the role (for example, frontline management, workplace training and skills assessment). Some of that training typically occurs off site.

‘New starters’ spend their first day in an induction course learning about occupational health and safety (OH&S), working conditions, pay conditions, and receiving a tour of the operations. On their second day, they receive their clothes and meet their training officer one on one before they start on the floor. On the floor, the new starter joins a team of (say two others—buddies) and learns the job from them, or they may have a single buddy to teach them the job (for jobs such as operating the bandsaw). The team is also overseen by the supervisors and the training officer.

Say I’ve got a learner with me ... where we work, we work in pairs, so they’d be 3 instead of 2 and he might only do half of what we do and once he’s done that we give him the other half of the job ... and you do extra if you need it [if the new starter falls behind the production pace]...we’re there to help them get through it ... you never used to get training like you get now ... you just got put on the job and away you go (A).

We work on the buddy system. that’s about the best way of doing it ... The learner might start off in the first week doing 20% of the task, by the next week it might be 40%, so eventually the buddy stands back ... part of my role is putting the right person with the right buddy (C).

In undertaking the case studies, it was possible to identify the leading edge in induction in meat industry training at Fletchers (see appendix 2). This company has taken the typical arrangements but embedded a particularly impressive form of them including:

- ✧ Recruitment, workforce development and training are matters central to the activities and strategies of senior management.
- ✧ They have enterprise registered training organisation status.
- ✧ Most of the training money goes to backing training on the line, including a team of on-the-job trainers.
- ✧ The company has built an impressive team of on-the-job trainers and supports them in the induction and skill development of workers.
- ✧ This provides the ideal supportive environment to accommodate not only new workers to the plant, but new workers to the labour force—Indigenous and non-English speaking people, women returning to the workforce, and temporary workers.

- ✧ The engagement with Indigenous people was also supported by a novel and creative intermediary.

In many ways this is an outstanding system. The workers we interviewed consistently reported respect, a supportive training environment and low stress as attributes of their work experience. It is, however, occurring in a context of task fragmentation and the new workforce development and skill use settlement noted throughout this paper.

Broader findings

The research into the meat-processing industry has generated insights that may be applicable to other industries. These include findings with implications for the way VET policy might adapt to remain aligned with the evolving nature and needs of sectors like meat processing and the workers within them. These findings build on the emerging Working as Learning Framework, developed by Felstead and others, which emphasises the potential for work and workplaces to be rich sites of learning under the right conditions (Felstead et al. 2009).

General finding 1: Supply chain and cost pressures on firms can increase trends towards task specialisation in process industries, encourage the erosion of existing industrial settlements between management and workers, and lead to training becoming more narrowly focused (from craft to task) and consequently shorter, making it more amenable to being delivered on the job.

Task specialisation has been a common way of increasing efficiency in the meat-processing industry in response to cost pressures that have come from the restructuring of the meat industry supply chain. There also seems to be a positive relationship between the size of an organisation, labour turnover and the extent of job specialisation. As the scale of production increases, it seems that the extent of specialisation has followed in the sector. In the past, when processing plants were smaller and competition not as intense, there was greater skill development, the standard roles required a broader range of skills, and job rotation was higher. Workers in large plants have in many ways shifted from being a collection of industrialised butchers to specialised process workers, and the time required to train a meat-processing worker has reduced accordingly.

In the case studies reported above, there appeared to be a link between job rotation and the length of training provided. The site identified as having the highest level of rotation—Fletchers Albany—provided longer for workers learning the various roles. The site identified as having the lowest level of rotation—Swifts—provided less time for workers to learn their role, primarily because they have relatively fewer tasks to learn. Other sites fell within these two extremes. There also tends to be a greater investment in the training of a high-rotation worker compared with a highly specialised worker, and therefore a greater loss is incurred if they leave. Against this is the risk and cost of injuries. From the preceding accounts, performing repetitive tasks for long periods of time seemed to increase the risk of strain and injury.

General finding 2: When the workforce is transient or temporary, jobs will tend to be broken down into work that is quick to induct and training is kept to the minimum needed to undertake those tasks.

In the case study sites it was possible to identify two broad categories of workers—those for whom work in the sector is a longer-term experience or expectation, and those who are passing through the sector. While we could not establish consistent attributes of each group, it was evident that a substantial proportion of meat-processing employees at any given time are by their very nature in this second category of temporary workers—travellers, students, and people in between jobs who leave because they have to, or once a better opportunity arises, along with temporary work visa holders. Historically, the meat-processing work was regular but seasonal, and it is of little surprise that seasonal and temporary workers were also attracted to it. It is also apparent from the preceding

accounts of workers that being able to obtain regular work was what had attracted them to meat-processing work over other alternatives where only casual work was being offered.

Nevertheless, the sector is characterised by high turnover and this reduces incentives for employers to invest in training because the return on this investment may not be realised. This helps to reinforce task-specific work and on-the-job training tailored to specific organisational needs and which aims to make the transition to a competent worker as quick as possible (see Fuller & Unwin 2006). This in turn may have the effect of reducing employees' receptiveness to undertaking training because employers are not perceived to value training for wider skills. Employers who value training that results in higher skills provide additional benefits to employees who undertake this, something also noted by Pocock (2009). Some workers may become more attracted to the industry as they become aware that the work has become more regular/stable in recent years and that there are appropriate financial rewards for training, and this may have a positive effect on employer's attitudes to training, but for now this remains a problem that VET cannot directly solve. It is as much a labour market as a training issue.

General finding 3: In larger-scale processing work the training needed to acquire skills has increasingly become about learning by watching and doing (and often task-based) and therefore increasingly suited to on-the-job training.

The practical training of meat-processing workers is largely undertaken on the job, where they can learn by 'watching and doing' in a real-work environment. This way of learning becomes more suitable and represents a greater proportion of what is learned in jobs that are increasingly task-based. Informants also considered that this way was more efficient and effective. Learning by 'watching and doing' was also said to benefit people with limited English language and low literacy skills—these people now represent a substantial proportion of the actual and potential workforce in the meat-processing industry.

General finding 4: As firms grow, dedicated (often in-house) training arrangements become more financially viable and preferred, especially where government training funding is offered to the training provider.

There also appears to be a positive relationship between the size of the firm and the extent of in-house training undertaken. As the size of a firm increases, it appears that in-house training becomes more economically viable and commonplace. (Small firms tend not have enough volume to warrant dedicated training departments.) In-house training is also more practical because workers do not have to leave their workplace to undertake training. In the context of high turnover, greater specialisation and high diversity of labour, much of the training is directed at induction and task-oriented competencies. However, it seems that there is an important role for VET to play in providing training in the more technically demanding aspects of training in meat processing (occupational health and safety and hygiene).

General finding 5: Supervisors and on-the-job trainers play a major role in modelling good work practices and VET can play an important role in further developing these people.

The role of supervisors and on-the-job trainers is very important to workers in relation to issues such as a supportive workplace, trust, work intensity and attitudes to hygiene and safety. While the chain-driven processing system in abattoirs does not afford workers much control over the allocation and structuring of work (attributes which Eraut et al. 2000 refer to as 'context' factors in work and learning), supervision and training do seem to have a significant role in improving what they refer to as the 'learning' factors—the challenge and value of work, quality of feedback, support and levels of trust, and the confidence, commitment and personal motivation of individual workers (cited in Keep forthcoming).

The case study accounts suggest that supervisor training in particular has been central in 'softening' what had been a quite tough and adversarial culture in the meat-processing industry. The training of supervisors (who not only train but often model behaviour in meat processing to new starters) and

workers in how to communicate and resolve conflicts has led to decreases in altercations and ‘down time’ on the floor, and this can be expected to have a direct effect on productivity. Moreover, we found that supervision and training can (and already does in leading sites) move from conflict avoidance to creating a workplace culture of supporting the development of workers. Frontline management training has already been particularly useful to the supervisors interviewed, but the promise of training moving to address workplace skills development and culture (the learning factors in the work as learning framework) more directly is exciting. In at least one of the case study companies, we were able to identify significant achievement in this direction, but these innovations are not very well understood throughout the industry.

Promotion in the meat-processing industry is characteristically inhouse, and this fosters a sense of career path and company loyalty. But it can mean that supervisors and managers are exposed mainly to the workplace they are in and not to other management innovations and cultures, as might be the case in other industries. Training bodies, such as National Meat Industry Advisory Council, and other professional associations encourage the dissemination of innovative ideas and practices across the sector, but there is clearly scope for greater exposure to experiences and ideas outside the sector.

Summary and conclusions

This paper reports the results of an examination of the changing nature of work, skills development and training in the meat-processing sector using a skill ecosystem model. It also presents an analysis of four case studies of Australian beef and sheep processors.

The meat-processing industry, similar to many mature markets, especially those facing growing pressure from large or concentrated buyers such as retail chains, has become increasingly cost-competitive, and firms have experienced declining profit margins and undertaken relatively low levels of capital expenditure (investment in equipment). As with other mature industries, mergers and acquisitions have been a typical response to reducing competition and costs via increased economies of scale. Strategies that attempt to capture more revenue across the value chain (for example, vertical integration) and strategic relationships with buyers have also been initiated. There are now fewer but larger meat-processing establishments in Australia and the proportion of those remaining owned by foreign multinational corporations has increased. Meat processors have also lost power within their value chain, which has shifted from being driven by producers and processors to being dominated by a few large retail groups and international buyers.

The Australian meat-processing sector has emerged from a period of intense competition, international hygiene/disease scandals and changing meat consumption norms as a leading international exporter. In part, the international orientation of the sector has been dictated by the domestic constraints of stable domestic demand and the emergence of retail oligopolies, which now dominate the domestic market in an unprecedented and globally significant way. Despite these successes, many competitive challenges remain for meat processing; including the growing scale of live cattle and sheep exports, the increasing environmental challenges of producing animal protein for human consumption, and the difficulties of attracting and retaining workers.

While growth of processing size/agglomeration has been a trend for at least two decades, meat processing remains labour-intensive, and cutting unit labour costs is a key focus of processor dynamics. One way of cutting costs has been to retain most meat-processing plants in rural or outer-urban areas that are closer to supply chains (such as farming and feedlot areas) and where land is cheaper. Denmark is an exception to the US model of low-cost production that has tended to be utilised by most other countries. Danish meat processing is now characterised by high levels of mechanisation and automation and this has had the effect of changing the nature of meat-processing work significantly.

Increasing the rural orientation of processor location has had the effect of making it more difficult to recruit and retain labour because potential labour pools are typically smaller in these regions, and often shrinking. Further, urban dwellers are reluctant to relocate to these areas because there are (perceived to be) limited services and amenities. This development has also occurred in the context in which other jobs (with similar or better pay and conditions) can be found in metropolitan areas, while the mining boom has offered workers prepared to move or fly-in-fly-out new opportunities to earn much higher incomes.

While much has been done to make the meat-processing sector a better place to work, enduring problems remain. Work no longer occurs under an effective job-finish system of daily work, and longer days (including shift work), where highly task-specific work is performed, now prevails. In real terms, wages have declined in meat processing since the 1980s. As a result, the industry has had

to reach into different pools of labour than in the past and large meat-processing works are now a kaleidoscope of workers of different ages, genders and backgrounds. The sector now uses what used to be thought as of temporary labour pools as a significant part of its labour supply, so much so that the sector is now one of the largest employers of workers on working holiday and temporary skilled migration visas. In addition, some larger processors play a role in their communities by developing relations with secondary education institutions and provide or support outreach services to people not in the paid labour force, in part at least to secure ongoing supplies of processing labour.

As well as the increasing diversity of the meat-processing workforce, the sector is now characterised by what at face value seem to be alarming levels of labour turnover. Average labour turnover (commonly cited by owners and managers) is around 50%, with some processors experiencing much higher turnover. Managing the risks of these labour flows is now a key part of processing success.

A picture therefore emerges of one of Australia's most export-oriented sectors, which has weathered an incredible period of competition and volatility in international markets, but which has changed its place in the labour market. The meat-processing industry is now one of the first ports of call for many workers entering or re-entering the paid labour market. It now also employs a large number of people from non-English speaking backgrounds, and, even though it is a less seasonal business than previously, it experiences a sort of seasonal labour flow via high turnover. These attributes and conditions now constitute a new sort of equilibrium in the sector, and training and management systems have changed, and continue to change, to accommodate this new reality.

However, major challenges remain for the sector, with training, supervisory and management skills now required to mobilise such a differentiated group of workers. High rates of labour flow and the workplace culture necessary to make it possible for people with diverse backgrounds to commence and then operate in harmony demand an innovative solution. Much innovation is already evident, but it remains an ongoing challenge.

A growing awareness of the need to change the way supervision and training are undertaken was also evident in the accounts of key informants across all of the four case studies, and this need would appear to be a direct response to the many challenges identified in the ecosystem analysis that workers and owners alike are now facing.

It is also apparent that the sites have practices in place to support the development of longer-term employees, but whether task-oriented training and job design systems are suitable to retention remains an open question. Also, we found an internal labour market system that rewards loyalty and performance. But supervisors and managers who come up through these systems also need to consistently improve their operations, not just from their peers in their sector, but beyond. How the sector and individual processors provide opportunities for supervisors and managers to mix with managers and supervisors outside the sector and gain exposure to innovations and developments represents one of the future challenges for the sector. VET can play an important role here in providing supervisor training off site and providing managers from different meat processing sites with an opportunity to interact and share knowledge and experiences.

Where to from here?

The research identified both a restructuring of the labour process and a restructuring in the role of meat-processing work in the wider labour market. For workers in the meat-processing industry this is often their first job (in Australia), or may be their return job after an absence from the labour market. Training plays an increasingly important accommodating role in this process, and much of that training is now typically done on the job, through in-house training (undertaken by an employer/private registered training organisations, or by an on-site VET provider). On the other hand, the meat-processing sector inducts and trains many workers, but with low completion rates and high turnover of workers more generally, a question arises over whether skills acquisition and

utilisation in the sector are satisfactory. Large numbers of people move through the sector and they receive different levels of skills formation and utilisation. An open question then is whether this training arrangement acts largely as a way of subsidising the training of a high-turnover meat workforce, or reflects the sector's new place in the wider labour market—as an early port of call for workers in the labour market, some of whom stay in the meat-processing sector, while others go onto other jobs. Despite a heavy orientation to task specialisation, meat processing can still provide a place for learning, if management is committed to developing a supportive learning culture for the diverse workforce it now employs. The pressure on meat processors to attract and retain workers in tight local labour markets, with very real pressures on cost and quality, has already seen some processors grasp this challenge. However, the spread of innovative responses in supervision and training is quite uneven. Getting the industry to focus on work and supervision arrangements is critical here, and the sorts of skills required for this are well suited to VET-type training initiatives.

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Appendix 1: Institutional structure of meat-processing sector

Professional and trade associations

The Australian Meat Industry Employees Union (AMIEU) represents workers in processing plants (abattoirs) and butcher shops. It has a long history of representing workers and organising labour in the industry, both in terms of their industrial interests, but also literally in supplying workers at sites. The AMIEU is also active in training at site and sector levels.

Meat Industry Training Advisory Council (MINTRAC) is a dedicated body comprising tripartite representatives concerned with training and skills. It might be thought that a shared emphasis on training and its institutionalisation through MINTRAC represents an important part of the post-tally industrial settlement to work organisation, industrial relations and skills. MINTRAC is a company owned by the meat industry and represents the industry in relation to training and education issues (that is, advocacy), and also provides a range of accredited industry training programs. MINTRAC is funded by levies collected by the Australian Meat Processor Corporation, Meat and Livestock Australia–Australian Meat Processor Corporation research and development funding, and funds raised via fees for services.

There are also at least three professional bodies that represent the various business/commercial interests of the Australian meat industry:

Meat and Livestock Australia (MLA) is a producer-owned company formed in 1998 to replace the Australian Meat and Livestock Corporation and the Meat Research Corporation. MLA is funded by levies paid on livestock sales made by producers, federal government dollar-for-dollar matching of expenditure on research and development, and member contributions (there are over 40 000 livestock producer members).

Meat and Livestock Australia describes its core activities as: growing demand for Australian red meat; increasing market access to products; enhancing competitiveness and sustainability; and increasing industry capability. MLA also plays a lead role in developing strategic plans for the industry as a whole and undertakes co-investment initiatives with the Australian Meat Processor Corporation (AMPC).

Australian Meat Processor Corporation (AMPC) is a national research and development centre that represents the Australian red-meat-processing industry. The corporation's activities and aims include: promoting Australian meat domestically and internationally, improving the quality of red meat, financing research and development projects and investments in the red-meat industry.

Like Meat and Livestock Australia, the Australian Meat Processor Corporation was formed in 1998 when the Australian Government restructured the Australian red-meat industry. The corporation also administers the statutory levies for the Commonwealth introduced into the meat-processing sector in 2007. A large percentage of these funds are re-invested on joint initiatives with Meat and Livestock Australia (a memorandum of understanding between the two organisations is in place).

Australian Meat Industry Council (AMIC) is the peak council representing retailers, processors and smallgoods manufacturers and it regards itself as the only industry association representing the post-farm-gate Australian meat industry. The council's services include: coordinating member input to policy development; advocacy and disseminating information; assisting with implementation of quality systems; and representing members at events such as meetings, seminars, and conferences. The Australian Meat Industry Council deals with general industrial relations issues for the industry, although most large processors run their own industrial relations activities.

Appendix 2: The ownership structure and business model used at each case study site

Fletcher International, Dubbo, is a family-owned company based in Dubbo, which processes around 9000 sheep each day and exports over two-thirds of its produce to around 90 countries. It is one of the largest employers in Dubbo, an inland regional centre with a total population of around 40 000 (11% are Indigenous people). Bound by farming and grazing land, Dubbo is located approximately 400 kilometres north-west of Sydney.

With around 900 full-time staff, Fletcher Dubbo employs around 5% of all wage and salary earners in Dubbo (ABS 2008b). Around 70% of staff are full-time and tend to be males. Around 70 employees work in the company's high-technology wool-top-making facility (on site). Fletcher Dubbo actively aims to employ Indigenous people (around 150–200 Indigenous people at any one time) and a certain number of overseas workers (around 65 overseas workers can be employed at any given time under working holiday 417 visas). Fletcher Dubbo does not use 457 visa holders to any great extent. All the halal-accredited slaughtermen are Australian residents. Workers are employed under an enterprise bargaining agreement (EBA); two-thirds are union members. The Australian Meat Industry Employees Union has elected representatives on site, and the site has a joint consultative committee. The EBA provides pay and conditions above award rates, and there is facility for staff to be paid according to a 'tally system' (piece rates). The site has a strong emphasis on internal promotion. Both act as rewards and strategies for retaining staff and a way of selecting more talented staff for the more complex tasks.

Fletcher International Dubbo has positioned itself as a high-quality producer, capable of delivering a high number of meat cuts for a wide range of customer needs. Fletcher has also developed a strategic approach to export markets and has a number of close relationship-based customers. They have also invested heavily in value-added production up and down the value chain. (They produce pet food inputs, gelatine, wool, margarine inputs, and pharmaceutical agents, and control transport services—a rail head and trucking—and have a very high-tech plant which converts wool tops to wool fibre.)

Fletcher International Albany is a lamb and sheep abattoir located around 400 kilometres south-east of Perth, Western Australia. It is the second of two plants owned by Fletcher International. Around 5300 sheep are slaughtered and butchered there each day, mainly for export markets, but the plant has the capacity to process 9000 per day. Four-hundred-and-fifty staff usually work two nine-hour shifts, five days per week. Employees tend to be males working full-time (approximately 400 full-time, 50 casuals). Around one-third are overseas workers (around one hundred 457 visa holders, and around fifty 417 visa holders). High levels of teamwork and 'self directed' team-management approaches are used, and bonuses are provided for meeting production quantity and quality targets. The site was built as a 'green fields' site and, as distinct from Dubbo, Fletcher Albany is a non-union site. Fletcher International divides its orders between the Dubbo and Albany sites, with the Dubbo site taking on the lead function of managing sales/exports and planning orders. The Albany site also sends wool tops to Dubbo to be processed by the wool-processing plant there. Albany is situated on a natural harbour and has a population of less than 30 000. (Fletcher Albany employs nearly 5% of all wage and salary earners.) Major industries include fishing, agriculture and tourism. Wind farming is an emerging industry for Albany.

Swifts Australia (Dinmore site) is a beef abattoir in Queensland that slaughters and butchers up to 3300 head of cattle a day, mainly for export (over 75% of produce is exported, mostly to Japan, the US, Korea, Taiwan and Indonesia). Dinmore is approximately 50 kilometres west of Brisbane.

With ten processing sites and five feedlots across Australia, Swifts is Australia's largest beef processor. Swifts Australia is part of a multinational corporation with operations and ownership ties to the United States, Argentina and Brazil (where its corporate headquarters are located). Swifts Dinmore employs around 2000 workers. Approximately 1700 of these staff work in production roles across two shifts from Monday to Friday, with the remainder in cleaning and maintenance and head office functions. Most employees were males (70%) employed and full-time casuals. Around 20% were from overseas (457 visa holders from China and Brazil).

A five-year enterprise bargain agreement is currently in place and no piecework incentives were provided. Most workers were said to be union members and a walking delegate was employed at the site. The company also had a strong internal promotion culture aimed at increasing retention by providing career paths and quality managers.

Swifts' business strategy is one of high-volume production achieved via economies of scale and size, and fast production speeds using high levels of job specialisation. Value-adding also has increased in recent times. (A by-products plant was under construction at the time of this research.)

Teys Brothers is an Australian-owned, vertically integrated, export beef processing and value-adding company. It is the largest Australian-owned and second-largest beef processing company in Australia, processing one million cattle per year (4400 per day), employs in excess of 2500 staff and has a sales turnover of more than \$AUD1.2 billion per annum. The company was originally formed by a partnership between the four Tey brothers in 1946, but grew (in 2002) out of a joint venture of the Tey and Packer families. Tey Bros is comprised of four processing plants, a 30 000-head feedlot, a tannery, wholesale divisions and a value-adding business.

Teys Brothers (Beenleigh plant) is located roughly halfway between Brisbane and the Gold Coast and is also the location of the group head office. The plant operates on a two-shift system and has a daily capacity of over 1400 head of cattle with approximately 800 employees. Tey utilises overseas-sourced labour to fill shortages (up to 50% of skilled staff, mostly from Brazil and Vietnam). Most workers are union members, and there is a union representative in every department, as well as a joint consultative committee. An enterprise bargain agreement is in place and skilled staff receive payments above the award, while slicers and boners receive tally (piecework) payments.

The Beenleigh plant is also the main location for processing grain-fed cattle from its own feedlot at Condamine, but it purchases cattle from as far south as southern New South Wales and into the central west of New South Wales. While Tey is a bulk processor, it has adopted a higher (quality) value-adding, product-differentiation strategy, which, along with vertical integration, aims to extract maximum revenue across the value chain.



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