

WIMMERA SOUTHERN MALLEE: INTENSIVE LIVESTOCK MAPPING PROJECT



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EXECUTIVE SUMMARY

E1 Overview

This document reports on the current status of intensive livestock production in Victoria's Wimmera Southern Mallee region, encompassing the local government areas:

- Horsham Rural City
- Northern Grampians Shire
- Buloke Shire
- Hindmarsh Shire
- Yarriambiack Shire
- West Wimmera Shire.

To take advantage of improved water security from the Wimmera Mallee Pipeline and reported growth in livestock industries, Wimmera Development Association is working to understand the current level of activity, and potential opportunities for further investment, in intensive livestock production.

Farming practices in the Wimmera Southern Mallee are dominated by broadacre, dryland cropping systems based on wheat rotated with other cereals, oilseeds (such as canola) and grain legumes (such as faba beans and chick peas). Farm sizes vary, with the majority in the range 600 to 800 hectares, and some larger than 5,000 hectares. The major service centre within the region is Horsham. Major regional centres within 3 hours by road transport include Bendigo, Ballarat, and Geelong, as well as the State capital of Melbourne.

E2 Summary of Current Intensive Animal Production

Table E1 shows that there are currently 87 enterprises involved in intensive animal production in the Wimmera Southern Mallee, with an estimated total production value of \$152.5 million per annum. There are a further 18 businesses with unutilised intensive animal production facilities, and at least 20 sheep and lamb producers interested in more structured lot feeding, under the right circumstances.

Table E1 Summary of Intensive Animal Industries in the Wimmera Southern Mallee

| Intensive Animal Sector | Number of Businesses | Annual Production Volume | Annual Production Value |
|---|----------------------|---|-------------------------|
| Pig Production | 29 | 17,900 tonnes | \$49.5 million |
| Poultry Production | 43 | 14,370 tonnes (meat) 2.98 million dozen (eggs) | \$75.2 million |
| Lamb Lot Feeding | 13 | 842 tonnes | \$4.7 million |
| Other Intensive Animal Enterprises | 2 | 3.2 million litres milk 55,000 head cattle | \$23.1 million |
| Interest in Lot Feeding | 20 | | |
| Growers/businesses with unused facilities | 18 | | |
| Total | 125 | | \$152.5 million |

E3 Opportunities for Further Intensive Animal Development

A range of opportunities for further development of intensive livestock has been identified in the mapping project, and are presented in the body of this document. In summary, they incorporate:

- Product differentiation through free-range (and to a lesser extent, organic) production systems. Growth in free range production for table eggs and chicken meat is a particularly strong and current opportunity to enable Wimmera Southern Mallee growers to diversify their cropping enterprises by adding a contracted breeding or grow-out production activity.
- Stockfeed manufacturing and formulation, both pelletised and mashed, to suit emerging production requirements (utilising local grains, free from added growth hormones and free from antibiotics).
- Technical, veterinary advice and shedding and systems supply.
- Attracting and maintaining an effective labour force for the Luv-a-Duck supply chain to it to continue to grow in the Wimmera Southern Mallee.
- Intensive livestock industry collaboration in research, advisory services, value added product development, waste and by-product management, and production systems, labour force development, efficiencies in inputs (such as stock feed and litter) and logistics services.
- Establishment of at least one integrated growing-processing-marketing supply chain for turkey and game meat products, particularly as a diversification option for broadacre growers. The food service sector is not being adequately supplied with Victorian regional product in these areas.
- Bio-mass processing to produce thermal or other forms of renewable energy, and fertilisers, is an emerging opportunity that could best be developed through joint action among members of the intensive animal industries across the Wimmera Southern Mallee and Northern Victoria.
- Shared approaches to water savings and usage, renewable energies and other production efficiencies should be addressed on a regional basis (Wimmera Southern Mallee and Northern Victoria), in partnership with research and tertiary institutions.
- Lot feeding of lambs, as it is currently practiced in Victoria, and the Wimmera Southern Mallee in particular, is relatively unstructured, informal and irregular compared with other intensive livestock sectors. At present, most growers in the region do not practice either lot feeding or containment to finish lambs, and those who do mostly implement simple containment strategies in smaller paddocks or yards. Only 2-3 businesses operate lot feeding as an enterprise in its own right, with an investment in carefully designed pens, laneways, feeder and watering systems. The most likely mechanisms for addressing this opportunity are through collaborative structures; either groups of growers, supply chain partnerships, or joint ventures (possibly involving foreign investors and companies).
- Genetic improvement or, at least, breeding for selected traits is likely to become a more important strategy in lamb production in the future, enabling Australian lamb to be differentiated. Wimmera Southern Mallee growers are well placed to have a leading role in this paddock to plate differentiation.
- The main opportunity in lot feeding for Wimmera Southern Mallee producers, is one or more enterprise which adds another link in the lamb supply chain with the involvement of professional lot feeders who aggregate and finish stock (as their core business) and who have close relationships with processors, live-exporters, and retail and food service markets.

- The best business structure for serious lamb lot feeding endeavours are expected to be in community based/collaborative lamb feed lots, and/or joint ventures with foreign investors, where growers contribute product (lambs from about 30 kilograms weight for finishing) and have equity or membership in a collaborative business, with both horizontal and vertical supply chain links.

Photo E1 Piggery Sheds and Infrastructure



Photo E2 Turkey Shed in Conversion for Broiler Production



Photo E3: Formally Designed Sheep Feedlot



1. INTRODUCTION

1.1 BACKGROUND

Wimmera Development Association and the Wimmera Southern Mallee Regional Strategic Plans, both of which have been endorsed by the participating Councils, identify support for agriculture as a key priority, along with business development incorporating growth water from Wimmera Mallee pipeline and ground water reserves.

The Intensive Livestock Mapping project is supplementary to a range of foundation work previously undertaken by the Department of Primary Industries and Wimmera Development Association, including:

- Sustainable Agribusiness Opportunities from the Wimmera Mallee Pipeline project.
- Intensive Lamb Production-a commercial perspective.
- Understanding Investment in Agriculture.

The objective of this project has been to map the location of these intensive livestock operations across six municipalities and gather information to assist with potential expansions and further value adding facilities. This strategic information will be used in conjunction with Council and State Government departments to help drive strategic assistance with economic development, training and employment opportunities.

1.2 OVERVIEW OF THE WIMMERA SOUTHERN MALLEE

Wimmera Southern Mallee region is located in Victoria's west. It extends from the Grampians mountain range to the South Australian border, encompassing a large section of Victoria's dryland cropping and sheep production districts. The region incorporates the municipalities of West Wimmera, Hindmarsh, Yarriambiack, Northern Grampians, Buloke and Horsham.

The regional economy of Wimmera Southern Mallee is predominantly based on agricultural production and processing/manufacturing, community and domestic services, and tourism. Grain with sheep and grain with beef is the largest employing sector in the region, followed by hospitals, dedicated grain growing, specialised sheep farming, and supermarket retailing. The region has strong social infrastructure and active community groups.

In the Wimmera Southern Mallee region, farming practices are dominated by broad-acre, dry-land cropping systems based on wheat rotated with other cereals, oilseeds and grain legumes. Farm sizes vary, with the majority in the range 600 to 800 hectares, and some larger than 5,000 hectares. Intensive livestock production has become incorporated into many farm enterprises across the region involving poultry, pigs, sheep and cattle.

The Wimmera Southern Mallee Regional Plan (WSMRP) identifies the region as *"a proud agricultural region where participating in the life of its small towns and communities has been and continues to be a defining trait of the community"*¹.

As the lead economic and community development organisation for the Wimmera Southern Mallee region, the Wimmera Development Association is committed to supporting the intensive livestock industry and promoting opportunities for expansion.

1.3 SCOPE

The overall project objectives have been to map the locations of intensive livestock production in the Wimmera Southern Mallee and identify strategic plans and activities to support the increased opportunity for the agricultural sector provided by growth water.

¹ Wimmera Southern Mallee Regional Plan

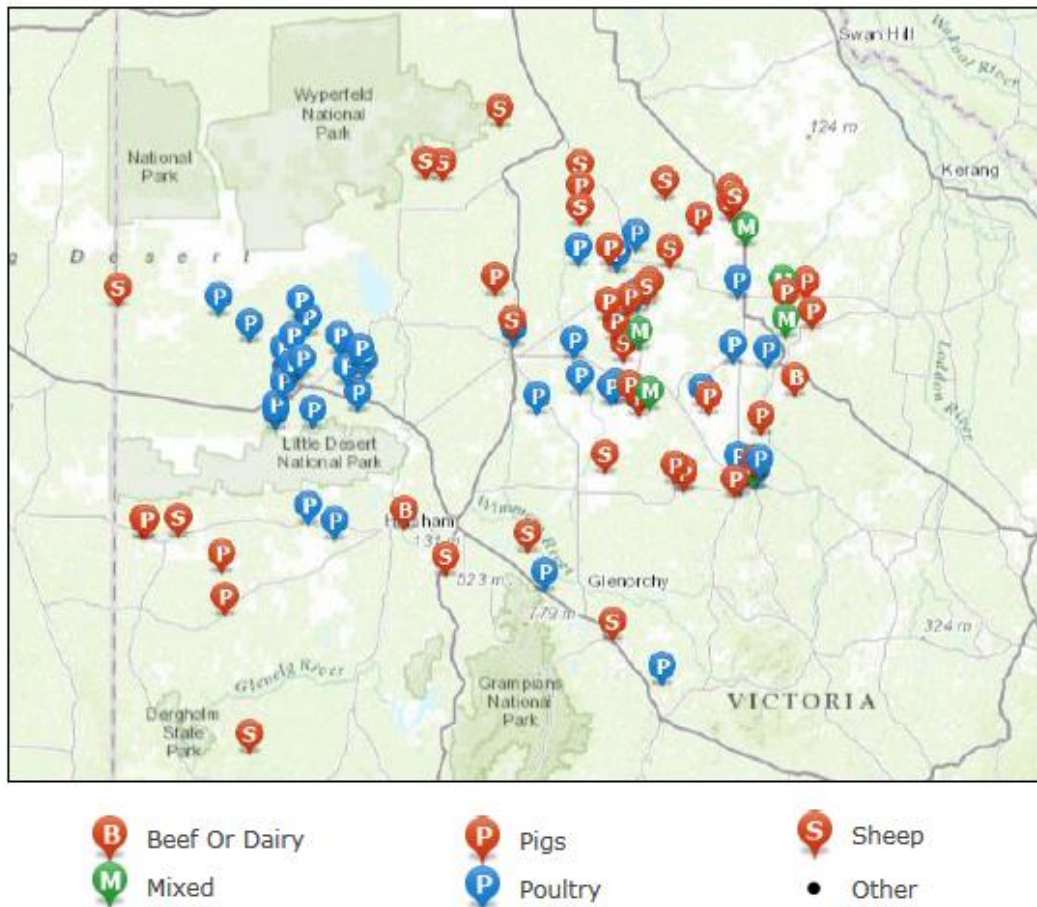
The components in the project work program to achieve this goal were:

- Collate and map current intensive livestock operations operating within the six municipalities of the region (Buloke, Hindmarsh, Horsham, Northern Grampians, West Wimmera and Yarriambiack).
- Liaise with Economic Development teams to identify current and proposed intensive livestock production.
- Liaise with animal processing businesses across the region to identify current producers and potential opportunities.
- Consult stock agents and animal husbandry businesses to identify current operations within the Wimmera Southern Mallee region.
- Consult GWM Water to assist with current operation locations (in the form of a GIS plotting system).
- Identify business development opportunities, areas for collaboration, supply chain development, and other strategic directions for intensive livestock in the Wimmera Southern Mallee.

The broad indicative locations of intensive livestock production in the Wimmera Southern Mallee is shown in Figure 1.1

Figure 1.1 Wimmera Southern Mallee Intensive Livestock Locations

WDA Intensive Livestock Capture



2. PIG PRODUCTION

2.1 PIG INDUSTRY PROFILE

2.1.1 Production Trends

Australian pig-meat production is currently 362,000 tonnes, derived from slaughterings of just almost five million pigs. There are pig farms in all Australian States, but they are predominantly located along the eastern seaboard of Queensland (26%), Victoria (24%), New South Wales (23%), and South Australia (15%) and in the southwest corner of Western Australia (11%).

The Australian pig industry has developed from a 'sideline' industry to grain and/or dairy production to become significant in its own right. The gross value of the pig meat industry was \$934 million in 2013² (and \$875 million farm gate value), having increased at an average annual rate of 0.85% over the 11 years 2002 to 2013. In 1960 in Australia there were around 50,000 pig producers with a total of 211,000 sows and an average of 4.3 sows. The national sow herd peaked at 460,000 in 1972 and declined to around 300,000 sows by year 2000. Despite the fall in herd size, annual output increased (from about 200 kilo tonnes to 370 kilo tonnes) through efficiency improvements and higher slaughter weights (averaging 55 kilograms in the 1970's to 73 kilograms by 2005)³.

The 1980s and early 1990s were years of consolidation for the pig meat industry, underpinned by strong research efforts involving government and producers. Significantly it was also an era of no frozen pork product importation, but this ended in the mid-1990s, and in the years since that time, exports have fallen, the number of pig producers has reduced, there has been considerable consolidation among processors, and importation of pig meat has risen dramatically. Over the past five years imports of bacon, ham and other smallgoods rose at a rate of 23% per annum.

In the most recent five year period (to 2013-14), pig farming has contracted at an average annual rate of 1.0% from the compound impacts of cheap pig meat imports, (aided by a strong Australian dollar) and increasing input costs (especially utilities and feed). Declines in domestic and export sales have led to more farmers exiting the industry and a reduction in the overall number of pigs. Over the past five years the number of pig farms contracted at an average annual rate of 0.8%⁴. As a result, the restructured industry has become more vertically integrated, with the majority of pigs owned by businesses with integrated breeding, farming, slaughtering and processing operations.

The total number of pigs slaughtered in Australia is currently 4.8 million, expected to rise to 5.0 million by 2018-19.

² ABS Value of Agricultural Commodities Produced, 2013

³ DAFF "Structure and Dynamics of the Pig Meat Industry (2007)

⁴ IBISWorld Pig Farming Industry Report 2013

2.1.2 Pig Products

During the past five years there has been a continued trend towards larger and more commercialised pig production systems to achieve economies of scale. Although somewhat interchangeable, commercially raised pigs are classified as either porkers or baconers. Porkers are those used for fresh pork, and baconers are used for processing into bacon, ham and smallgoods. The trend of increasing importation has, of course, affected the balance between porkers and baconers produced by Australian growers.

Photo 2.1 Free Range Pig Production in West Wimmera



Production for the fresh market has been aided by the promotion of fresh pork consumption by Australian Pork Limited (the industry peak body formed from the legacy of Australian Pork Corporation, Pig Research and Development Corporation, and Pork Council of Australia). There has also been a trend towards the production of leaner pigs to satisfy consumers' health concerns, which appears to have translated to higher domestic consumption rates. Per capita consumption of pork increased over the five years to 2013-14 from an estimated 24.7 kilograms to 25.7 kilograms, and this is expected to further increase to 26.8 kilograms by 2018-19.

In the past five years, the percentage of porkers in the industry increased from an estimated 47.3% of raised pigs to 61.2%, while the percentage of baconers fell by the reciprocal percentages (ie from 52.7% to 38.8%). This is due to farmers and processors increasing focus on pig meat for the fresh market.

Pigs are increasingly being distinguished by the production system. The conventional method of production has been shedded pigs in pens. There is a trend towards free-range pigs, unhindered by cages or stalls. There has also been an increase in organic pigs that have free access to pasture and clean, dry housing, have organic feed and bedding, and are not treated with antibiotics or chemicals. There are also 'bred free-range' (where sows and piglets are free ranged) and pasture-produced pigs (where weaners and pigs spend time in open paddocks). These alternative methods of production reflect consumer perceptions of taste and quality, and consumer concerns over food safety and animal welfare.

Australia is not open to imported genetically improved pig varieties, and the vast majority of commercial stock is derived from three main breeds and cross-breeds: Large White, Landrace and Duroc.

2.1.3 Pig Industry Market Outlook

Australian pig meat production is forecast to rise by 2% in the 2013-14 year to 362,000 tonnes and to remain steady in 2014-15. In 2014-15 the weighted average over-the-hooks price of pigs is forecast to decline by 1% to 302 cents per kilogram. The total supply of pig meat in Australia is forecast to rise as a result of increasing imports. This is expected to result in increased competition for local producers who supply the domestic pig meat processing sector. Over the medium term, pig production is tipped to increase to 374,000 tonnes while prices are projected to decline gradually, to 261 cents a kilogram by 2018-19 (in 2013-14 dollars)⁵. This is under the assumption that the fresh meat market will remain closed to imports because of biosecurity concerns, while the processed pig meat sector will remain open to competition from imports. Currently, all imported pig meat must be processed before sale, usually into bacon, ham or smallgoods.

The industry is expected to grow slowly over the next five years as production volumes start to increase and pig meat prices remain stable. Contraction within industry participation is likely to slow, though consolidation is expected to continue. Imports of pig meat are expected to remain an important influence on the industry, although the potential depreciation of the Australian dollar would make imports more expensive and less attractive.

2.2 PIG PRODUCTION IN WIMMERA SOUTHERN MALLEE

The eastern and southern sections of the Wimmera Southern Mallee region have been traditional pig production areas. In 2001 there were almost 90 pig producers in Northern Grampians, Yarriambiack and Buloke Shires, with an average herd size of 92 sows and average annual production of 697 porkers and baconers⁶. At that time only 13% of the growers had a contract arrangement with a vertically integrated processor (to feed and raise pigs to a defined specification), and the remaining 87% were independent growers with an established breeding herd (although in practice most of these supplied pigs to a single processor on a regular basis). Further, pig production was usually a complementary activity to other farming enterprises:

- 83% produced pigs as a minor, complementary agricultural enterprise
- 17% produced pigs as the sole or major agricultural enterprise.

The trends and dynamics in the pig industry have changed considerably since 2001, in terms of number of growers, supply chain structures and production systems. The entire Wimmera Southern Mallee region has an identified 27 active growers, representing an average annual decrease of 10.6% per annum, although the production volume from the region has increased by an estimated 10.2% over the same period. The industry restructuring (through acquisitions, mergers and rationalisation), the introduction of a phase-out period for non-stall sows⁷, and import competition have all contributed to the reduction in the number of growers, and the proportion of independent growers.

⁵ ABARES Agricultural Commodities March Quarter 2014

⁶ Street Ryan, Opportunity Study for a Regional Pig Processing Plant: Buloke, Northern Grampians and Yarriambiack 2001

⁷ Elimination of stalls for sows in sheds has been scheduled for 2017, but most Australian producers are eliminating the practice sooner.

2.3 THE PIG SUPPLY CHAIN

2.3.1 Supply Chain Mapping

The pig industry is highly vertically integrated. Vertically integrated supply chains represent about 5% of all operators in the industry, but account for about 60% of industry production⁸. 'Corporate pig farms' tend to have more than 500 sows. Some vertically integrated firms, such as George Weston Foods, also operate in ham, bacon and smallgoods manufacturing. About 30% of farms are contract growers and the remaining 65% of producers are small producers (generally less than 100 sows) that produce pigs in addition to other primary production, such as grain growing.

The three main functional supply chains are:

- Vertically integrated processors operations (fresh meat processors and processors/smallgoods manufacturers), which contract to growers.
- Independent growers selling to meat processors, specialty retailers (butchers) and food service outlets.
- Opportunistic or 'spot sales' to processors.

The predominant market for farmed pigs is domestic vertically integrated meat processors. Vertically integrated companies in meat processing and marketing, like Hamsdale and Pastoral Pork, and/or meat and smallgoods processing operations, like George Weston Foods (which encompasses KR Castlemaine and Don Smallgoods), are responsible for a large proportion of Australian pig production.

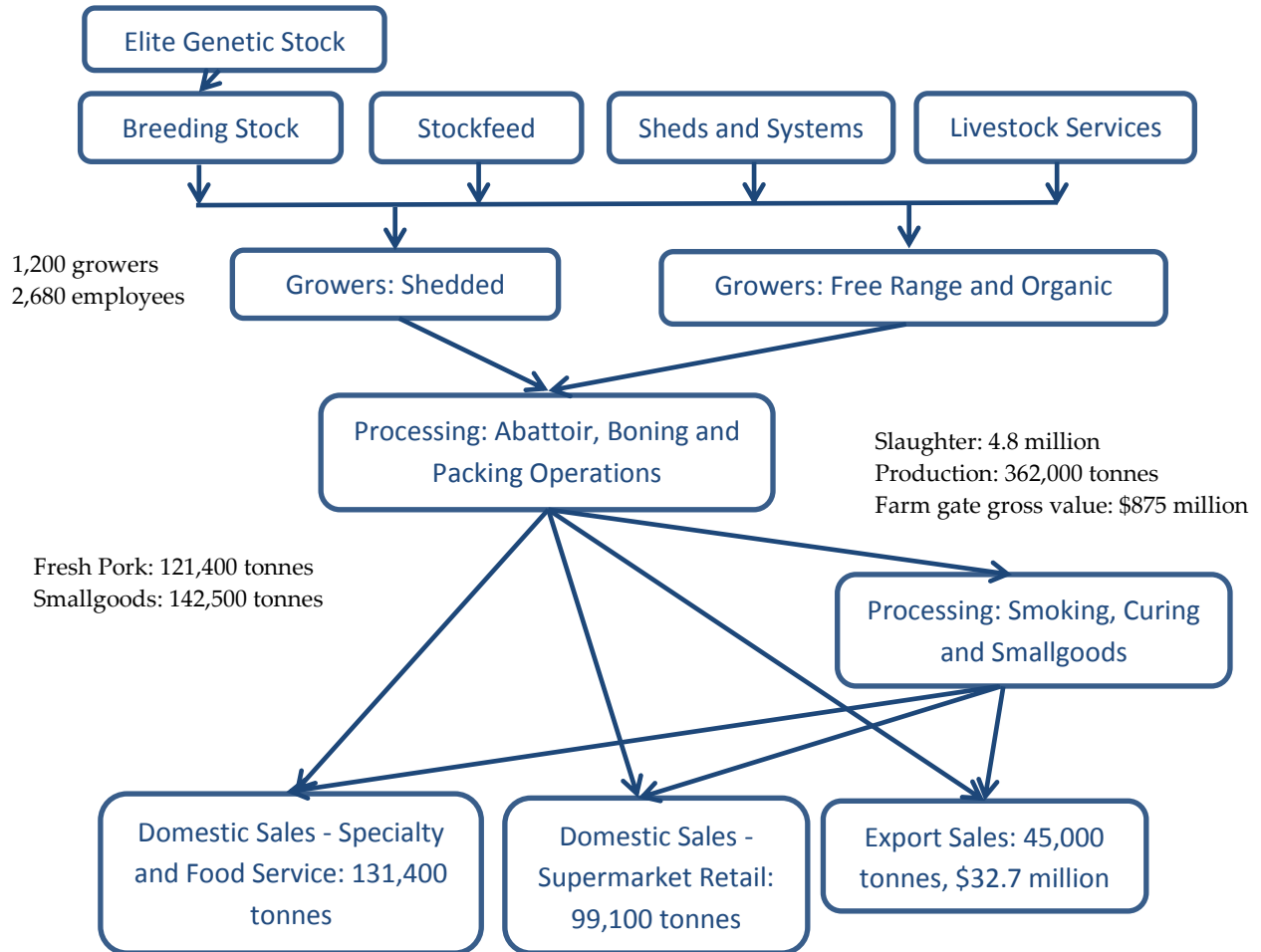
Meat processors and butchers account for the second-largest market. Growth in this market has been slower than vertically integrated meat processors as they are less competitive, and the number of growers supplying this segment has declined. However, as fresh domestic pork meat sales grow, butchers are likely to increase purchasing of pigs, especially those that are differentiated on the basis of regional branding and/or free-range and other perceived quality attributes. As well, butchers are likely to innovate with value added pork products and speciality lines to differentiate from supermarkets.

Opportunities for sales to meat processors on the spot market have fallen substantially due to greater volumes of meat being sold to vertically integrated processors. As major producers and processing companies take ownership of the supply chain, the ability to control the entire production process not only saves on costs, but also allows for greater quality control of the final product. This trend is expected to continue as costs are reduced by economies of scale. For meat processors that are not vertically integrated, it is likely that direct relationships with farmers will be established, further minimising spot market sales of pork.

The complete pig industry supply chain is presented in Figure 2.1, revealing in summary:

- 1,200 growers employing 2,680 people.
- 4.8 million pigs slaughtered per annum, yielding 362,000 tonnes.
- 121,400 tonnes of fresh meat product and 142,500 tonnes of ham, bacon and other smallgoods.
- 131,400 tonnes of product sold to domestic specialty stores and food service outlets, 99,100 tonnes sold through supermarkets, and 45,000 tonnes exported.

⁸ IBISWorld 2014

Figure 2.1 National Pig Industry Supply Chain⁹

The dominant drivers of value in the pig/pork supply chain¹⁰ are:

- Carcass return based on fresh and manufactured yields
- (For fresh retail product) the diversity of cuts, quality and meal occasion compared with major competing meats (particularly beef, lamb and chicken)
- Increasing consumer demand for products from free range production systems.

There are 29 identified pig industry businesses represented in the Wimmera Southern Mallee region:

- 2 are vertically integrated producers/processors
- 1 is an elite breeding and technical services business
- 1 is a specialist pig stock feed producer
- 2 are parent stock breeders
- 21 are breeders and/or growers of weaners, porkers and baconers. Almost all these businesses are also broadacre farming operations with crops and other livestock (mostly sheep).
- 2 are vacant facilities or on the market.
- Around 239,000 baconers and porkers are produced per annum, yielding a dressed weight of about 17,800 tonnes.
- The estimated gross annual farm gate value of production is \$49.5 million (about 28% of the total Victorian production by value¹¹).

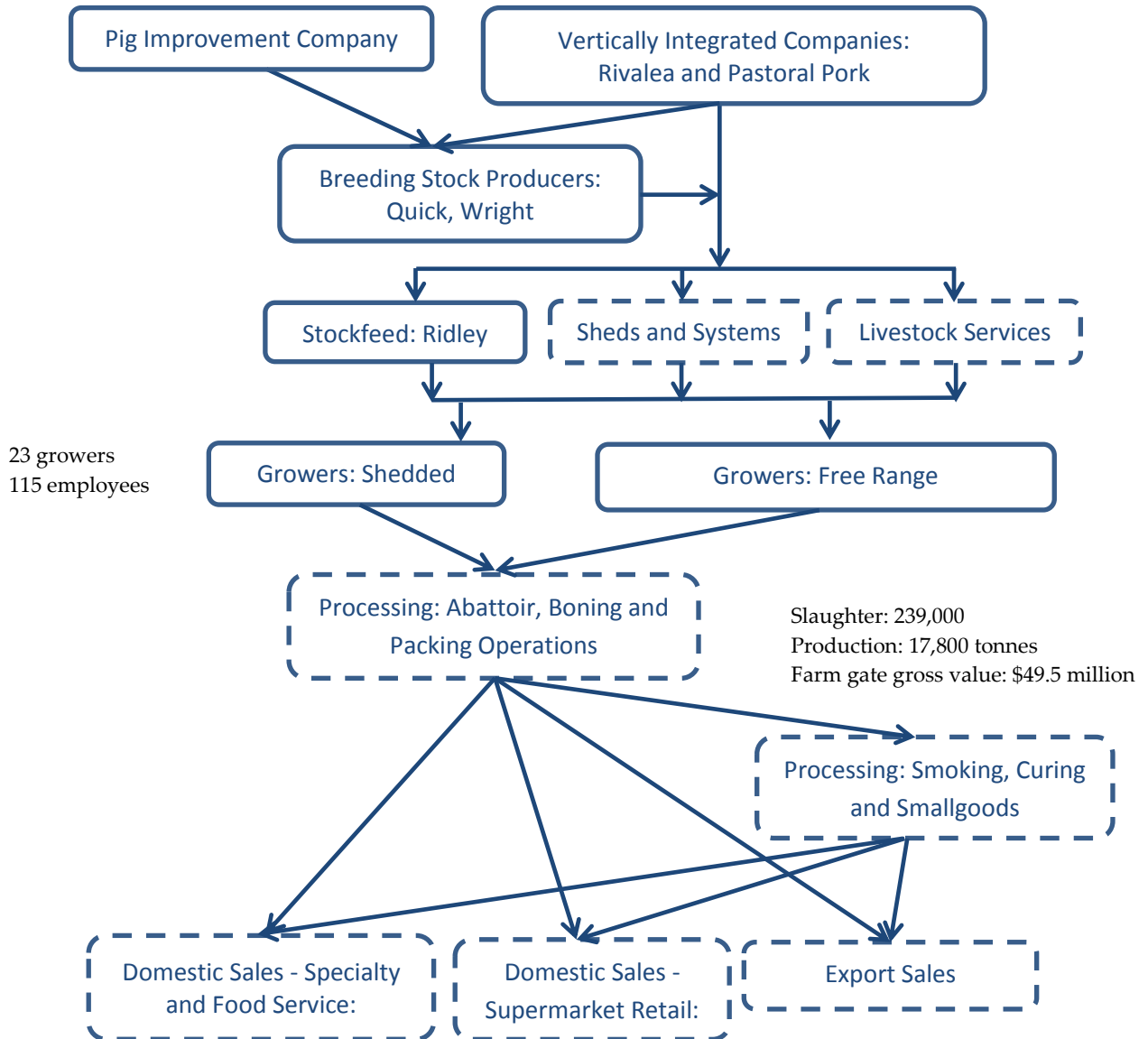
⁹ Volumes include allowances for waste and by-products

¹⁰ FreshLogic DAFF Foodmap 2011

Several links in the pig industry supply chain operate as commercial businesses in the Wimmera Southern Mallee region, including:

- Genetic and technical services
- Stock feed manufacturing
- Production of weaners from breeding sows
- Growout of porkers and baconers.

Figure 2.2 Wimmera Southern Mallee Pig Industry Supply Chains



2.3.2 Major Businesses in the Regional Supply Chain

Rivalea Australia

Hamsdale Australia Pty Ltd, through Rivalea (Australia) Pty Ltd, is Australia’s largest pig producer. In 2012 it ranked 964 in Australia’s top 2,000 companies, with revenue of \$315 million and 980 employees (including all subsidiaries). Hamsdale Australia Pty Ltd owns Rivalea, which in turn is wholly owned by Singaporean company QAF Limited. Until July 2009, Rivalea operated under the name of QAF Meats Group.

¹¹ Victorian farm gate production value in 2013 was \$177.5 million (ABS Value of Agricultural Commodities 2013)

Hamsdale Australia also has an 80.0% interest in Diamond Valley Pork Pty Ltd, which operates as an abattoir and boning business in Melbourne, and is the processor for several pig growers in the Wimmera Southern Mallee.

The first Rivalea piggery was established in 1971, and the company is now vertically integrated, encompassing stockfeed milling, farming operations, pork processing, sales and distribution. Rivalea has seven company-owned farms across Victoria and New South Wales over a total area of about 100 square kilometres. A number of third-party contractors also carry out production.

The company has been increasingly contracting out its pig production operations, with contracted production accounting for about 50% of the total. It has also been reducing its pig numbers. In 2008, the company reconfigured its business to reduce costs, and expanded sales of fresh meat (which face less competition from imports than frozen meat). Rivalea sells products to retailers and manufacturing businesses, and exports about 30% of all Australia's pork product exports (and the major markets are Singapore and Japan). The company has about 400 employees in its farming operations. Rivalea prides itself in its competitive strengths in high quality animal produce and 'friendly farming' practices.

Rivalea owns and operates specialised export accredited abattoirs, boning and packaging facilities at its Corowa site, and also retains a majority share of a contract facility (Diamond Valley Pork) in Melbourne. Rivalea is Australia's leading producer of pigs. Rivalea has an extensive network of company-owned and contract farms across southern NSW and central Victoria producing pigs for Australian and international markets. Like the poultry broiler industry model, Rivalea has full ownership of all animals in its supply chain.

Rivalea's stockfeed mill in Corowa produces 45,000 tonnes of feed per year, some of which is used by growers in the Wimmera Southern Mallee, together with contracted production from Ridley Agriproducts in St Arnaud.

Rivalea's farming sites are located at Corowa, Huntly, Balpool, Bungowannah, Gre Gre (near St Arnaud), and Willow Grove. The Gre Gre property is in the Wimmera Southern Mallee and has 46 production sheds covering an area of approximately 253,000 square metres. The property has the capability to stock and produce 80,000 porkers.

Pastoral Pork

Pastoral Pork is the second vertically integrated pork business with a strong presence in Wimmera Southern Mallee. Pastoral Pork, formed in 1992 is Australia's largest outdoor pig producer. Pastoral Pork markets product under the Otway Pork 'paddock to plate' brand, and has grower operations in the Otway Ranges, West Wimmera Shire and Northern Grampians. All Pastoral Pork products are bred free range.

Pastoral Pork products are processed at the QAF/Rivalea plant at Diamond Valley Pork, Laverton.

Pig Improvement Company

The Pig Improvement Company (PIC) has 34 'franchised' type subsidiaries around the world, with the global headquarters in Franklin, Kentucky, USA. *"PIC is the international leader in providing genetically superior pig breeding stock and technical support for maximizing genetic potential to the global pork chain. PIC combines quantitative sciences with leading edge biotechnology to develop non-GMO breeding stock that is focused on meeting the needs of its customers"*¹².

PIC is the world's largest, and most geographically diverse, pig breeding and technologies company. PIC's genetic improvement program utilises the variation available in 17 different line populations worldwide. The performance of these lines, and the products derived from them, are measured in many different environments around the world, with the information collected in Genus's proprietary genetic database. There are four internationally elite genetic GGP stock herds maintained by PIC.

Unlike its sister companies, PIC Australia does not have access to the pool of internationally genetically improved species. Australia has the world's highest 'disease free' porcine status and has been closed to importation of pig livestock (including genetic improved stock) since 1983. As a result, PIC has its own genetic improvement program within Australia using Large White, Landrace and Duroc pure lines with crossbreeding for selected traits. Genomics (or gene markers) are used, with every pig DNA tested.

PIC's genetic improvement production is based in Grong Grong, New South Wales (near Narrandera). From this facility, breeding stock is sold to producers. PIC estimates that it supplies about 60% of pig breeding stock in Australia. There are 70 PIC supplied growers in the southern Australian region (southern New South Wales, Victoria, South Australia and Tasmania). Most of the growers in Wimmera Southern Mallee region are supplied with PIC breeding stock.

PIC notes that, in addition to the industry rationalisation of recent years, there are quite a few current/recent growers who have left the industry due to the phasing in of non-stall sow requirements. The commonly used new system replacing is 'electronic sow feeders' (using recorders on the sow's ear) which gives the sow exclusive access to a feeding area for a limited time and then returning to a pen. Two square metres per pig is the new guideline that PIC will use.

Pork processing plants that service producers in the Wimmera Southern Mallee include Rivalea in Corowa, Diamond Valley Pork in Laverton, Australian Food Group (formerly Vincents) in Laverton, Riverside Meats in Echuca, Sinclair in Benalla, Primo in Port Wakefield, and Big River Pork in Murray Bridge.

Suppliers to the regional pig production industry:

- Stockfeed
 - Ridley Agriproducts, St Arnaud
 - Reids, Colbinabbin
 - Coprice
 - Bunge/Rivalea, Corowa (sell commercially as well as product for Rivalea corporate growers)

¹² PIC Annual Report 2013

- Systems and Equipment
 - Redpath Ideal, Bendigo
 - Jacksons, Murray Bridge
 - Mike Anderson, Bordertown

Other significant supply chain 'managing' businesses in the pig industry which do not have a presence in the Wimmera Southern Mallee are:

- **Food Investments Pty Ltd**, which is wholly owned by United Kingdom (UK) company Associated British Foods. Food Investments Pty Ltd was established in the 1960s and now generates over \$2.0 billion annually (making it one of Australia's largest food manufacturers). Food Investments operates in the pig industry through its wholly owned subsidiary George Weston Foods (GWF). GWF is a diversified food processing company with interests in flour milling, baked goods, flour, milled goods, animal feed and smallgoods. The smallgoods businesses are KR Castlemaine and Don KR. Through its purchase of KR Castlemaine, GWF operates three piggeries in South Australia and two piggeries in regional Victoria at two sites, Girgarre (Campaspe Shire) and Bears Lagoon (Loddon Shire), both east of Wimmera Southern Mallee. The two Victorian properties house up to 35,000 pigs and feed mills to produce 15,000 tonnes annually. The Girgarre property is a breeder farm and the Bears Lagoon site is the grow-out operation for KR Castlemaine. There is no longer a pig abattoir in Castlemaine, where the facilities are now entirely smallgoods and value adding focused. Pigs are processed at Big River Pork in Murray Bridge, South Australia.
- **Craig Mostyn and Co Pty Ltd**, a company that has operated in agribusiness since 1923. The company primarily has operations in meat and livestock, recycling, and seafood distribution. Headquartered in Fremantle, the main processing facilities are located in Western Australia and Tasmania, servicing domestic markets and over 60 international markets. The company has recorded continued success and is looking to undertake more acquisitions, as it is currently debt free. Craig Mostyn acquired a 4,000 sow piggery in Western Australia (from GWF) 2008, enhancing its fresh pork business. Following the acquisition, Craig Mostyn's Linley Valley Pork operations expanded to become the largest supplier of fresh pork in Western Australia. The Albany farm is a significant free-range Australian pig farm.
- **CEFN Pty Ltd**, which was established in 1940. The Queensland-based business has diversified interests in pig breeding, share farming and commercial building construction. CEFN also provides artificial insemination services for competing piggeries. The company has about 4,000 sows across three breeding sites near Clifton in Queensland, with 4,000 sows in commercial production. CEFN supplies genetically improved stock to a few growers in Victoria, in the Pyramid Hill/Yarrawalla area (Loddon Shire).

Photo 2.2 Weaner Grow Out Shed

2.4 OPPORTUNITIES AND OUTLOOK

Pork and pig production sector is currently on a “declining” phase of the industry cycle. The number of producers has dropped considerably over the past decade; from 2,475 farm establishments in 2004-05 to 1,202 in 2013-14 (an average annual decline of 8.4%). It is contracting both in absolute terms and in terms of the broader economy. In the Wimmera Southern Mallee there has been an estimated reduction in pig producers of 10.5% per annum in the period 2001 to 2014, but an increase in production volume of 10.1% per annum. The period has also seen a greater level of investment in the region by two major corporates in the industry:

- Rivalea, with the development of a large growout facility in Gre Gre
- Pastoral Pork Company producing the Otway Pork brand.

Opportunities for further pig industry development in the region are as follows.

- Product differentiation has become a distinct opportunity through free-range (and to a lesser extent, organic) production systems and, potentially, through antibiotic free product. Australian producers are increasingly concentrating on porkers (fresh markets) with a considerable reduction in the production of baconers (smallgoods markets). Porkers now make up 61.2% of Australian production (up from 47.3% over a five year period, to 2014) and baconers only 38.8%. The future opportunities for the Wimmera Southern Mallee are likely to be in:
 - Increased free range production. Bred free-range has become a marketing feature in the industry, and in the consciousness of consumers.
 - Organic producers.
 - Bio-secure shedded production with increasing economies of scale by median to large corporate supply chains. This may involve some contracted farms as well as corporate owned operations.
- The eastern section of Wimmera Southern Mallee (Buloke, Yarriambiack, and Northern Grampians) are ‘traditional’ pig production areas, where independent growers have had a long history of involvement. The number of growers has reduced considerably in the past decade, but production volume has increased. The region remains well suited to pig production (with increased water security and greater prioritisation of bio-security, this suitability has increased) and is central to the operations of integrated companies Rivalea and Pastoral Pork.

- West Wimmera has become a location for free range, biosecure pig operations, and has been selected by Pastoral Pork as one of two locations for its differentiated bred free-range activities. The investment in processing plants in Murray Bridge and Port Wakefield as well as those in Victoria (Benalla, Echuca and Melbourne) and Corowa in southern New South Wales suggest the Wimmera could have an increasing share of free-range pig production activities in the future.
- Stockfeed rations for the pig industry are already manufactured in the region, but could be expanded as part of integrated supply chains, particularly all-natural stockfeed (utilising local grains, free from added growth hormones and free from antibiotics).
- Technical, veterinary advice and shedding and systems supply are not well represented in the region, within local businesses. The Wimmera Southern Mallee is well known as a supplier of contractors, equipment, construction, and machinery in the grains sector (especially in tillage, grain conveyancing, silos and storage, spraying, and harvesting equipment), and in agronomic and farm management advisory services. There is an opportunity to supplement this product and service expertise with specific products and expertise in intensive livestock equipment. In the case of pigs this could include eco-shelters, climate control systems, tailored layouts/designs for free range systems, and feed systems.

Photo 2.3 **Porker and Baconer Growout Sheds**



3. POULTRY PRODUCTION

3.1 DUCK INDUSTRY

3.1.1 Industry History and Scale

Ducks have been domesticated for more than 4,000 years and have been used for meat, eggs and feathers throughout the centuries. Duck products continue to be popular and world-wide demand is very strong, particularly in Asian countries. In Australia, production is rapidly increasing, fuelled by a dramatic increase in the demand for duck meat.

Australia's history as a producer of commercial duck is very recent, dating back less than 4 decades. It is only since the 1980s that the duck industry in Australia has really expanded, with two main companies of almost equal size dominating the industry, Pepe's Ducks (located north-west of Sydney in South Windsor) and Luv-a-Duck at Nhill in the Wimmera Southern Mallee. These companies have capitalised on improvements in duck growth, driven by research and genetic improvement from Europe and North America, and by adapting these improvements to suit Australian conditions.

The Pekin breed of duck is the preferred breed for commercial meat production in Australia, primarily due to its rapid growth rates. The Pekin has a large body, orange feet and beak and creamy white feathers. It was developed as a breed in China during the time of the Mongol empire. Overseas, Pekin ducks have achieved weights of up to 3.2 kg by 6 weeks of age, but in Australia the production figures are much lower and producers generally try to achieve the marketable weight of 2.85 kg in 6 weeks. It is considered a multi-purpose breed because it also has a high level of egg production.

The Australian duck industry produces over 8 million ducks (18,000 tonnes of duck meat) annually and is worth over \$100 million. It is increasing at over 5% per year. Until recently, expansion was driven largely by the growth of the Asian population who create a high level of demand for duck meat.

3.1.2 Duck Products and Major Businesses

The vertically-integrated grower and processor in the Wimmera Southern Mallee is Luv-a-Duck. This company employs nearly 200 people and not only grows the ducks (under contract to outside growers) but has its own breeding flocks, egg production, incubation and processing facilities. Although initially focussing on producing whole, mainly frozen ducks (1.7 to 2.5 kg dressed weight), more recently, further processing has become a large part of the business. Smoked duck breast, cooked roast duck legs, roast duck shanks (wings) and a host of ready-to-eat dishes are just a few of their many products, some of which use Chinese recipes. About 30% of production goes to the domestic markets of Asian origin.

The other vertically-integrated grower and processor is Pepe's, whose ducks are grown on corporate owned farms in New South Wales. The company employs 120 people in farming and processing, and processes around 70,000 ducks each week. Of these, about 65% are sold fresh and some for the local Chinese market. Whole ducks are usually processed with head and feet on for the local Asian market which accounts for 80% of production. There is some demand for feet and tongues. The company has expanded into New Zealand and duck products are exported from there.

Both Luv-a-Duck and Pepe's import elite genetic stock from France and the UK to improve duck performance. This is a protracted and expensive undertaking as the eggs are incubated and the elite birds are raised in government quarantine facilities under strict supervision. Broiler, table egg and turkey companies also import genetically improved breeding birds through this same process and it helps Australia in maintaining world-competitive industries. The absence of this practice (or legal restrictions on the practice) is a limiting factor in some of the other intensive livestock sectors; notably pigs and game birds. There are several smaller duck farmers, especially in Victoria and Western Australia, who process their own birds and market them locally. Glenloth Game in Buloke Shire was one of these smaller duck processors, in the Wimmera Southern Mallee, during the past two decades.

Currently, there is no large-scale dedicated duck egg producer, although duck eggs, which are larger and contain more fat than hen eggs, are often available particularly in Chinese stores and markets. Processed duck eggs are imported into Australia from Asian countries (such as Thailand and Taiwan).

Ducks are grown to a liveweight of 2.85 kilograms over 6 weeks, and males will average 95 grams per day with a feed conversion ratio of under 2.5:1. Breast meat yield is the most important selection trait and this is about 20% of carcass weight. Thigh meat (22% of carcass weight) is also important. However, meat yield (breast and thigh fillets) is considerably less when bones are removed. As mentioned, domestic ducks have a reputation for accumulating body fat and unlike broiler chickens, very little of this is in the fat pad. Selection against fat deposition has reduced carcass fat to about 20% of carcass weight compared to 12-15% in broilers. As a consequence, dressing out is about 65% in ducks, where it is 70-72% in broiler chickens¹³.

3.2 TABLE EGG INDUSTRY

3.2.1 Industry Trends

The table egg industry has been transformed in the past 50 years, effectively from dominance by backyard production to a highly organised and integrated agribusiness sector. More recently, demand for table eggs has been rising rapidly. Greater per capita consumption is linked to new health messages regarding eggs (and new recognition of eggs as a natural functional food), eggs usage has been boosted by the plethora of cooking shows in the media, and by the inclusion of eggs in fast food and conventional restaurant menus. In 2006, fresh shell eggs were awarded the National Heart Foundation's Heart Tick trademark. There has also been increased demand for free range eggs as consumers include animal welfare issues in their food choices.

The outlook for the industry is expected to see growth supported by increased demand for value-added egg products and a further small rise in per capita consumption. Farm gate prices will continue to benefit from the growing share of higher value free-range eggs demanded by consumers, at the expenses of cage eggs. Over the next five years industry revenue is forecast to grow by an average 1.0% per annum to reach \$605 million in 2018-19.

¹³ Australian Poultry CRC 2014

A key issue for this industry remains the lack of a national, legally binding standard for the production of free range eggs. Barn laid eggs and even cage eggs are being sold as free range eggs. Cage eggs can be substituted for free range eggs if farms have both production types at one site and some barn laid eggs are labelled as free range because the farmers allow limited access to the outdoors, but not enough to satisfy the definition of free range according to free range associations. The passing off of barn laid and cage eggs as free range has reduced premiums for producers of free range eggs through greater competition and reduced consumer confidence in the product.

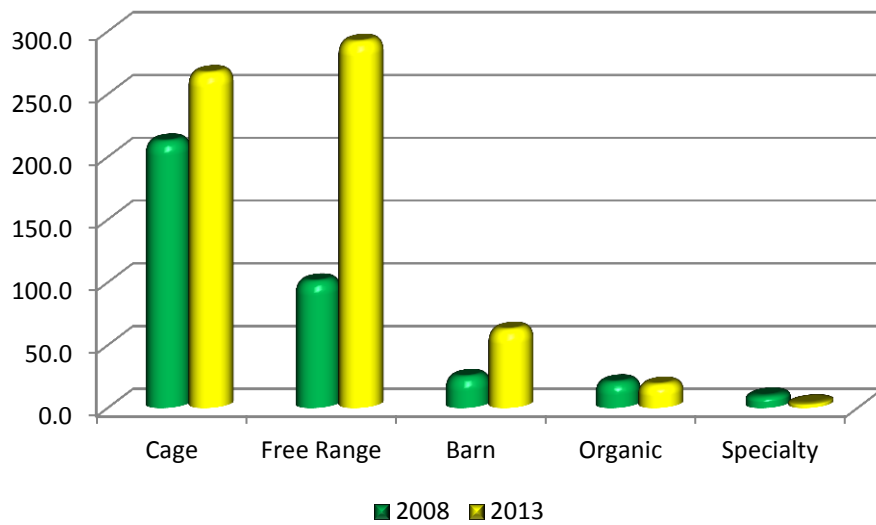
3.2.2 Egg Production Systems

There are five types of layer production system currently used in Australia:

- **Caged Layers.** In traditional cage (or battery) environments, chickens are kept undercover in small cages. This system of production is the lowest cost method of egg production, although legislative changes have stipulated larger cages, which has imposed additional costs to some growers and has forced some sheds and producers to leave the industry. Demand for cage eggs is declining as a share of industry volume and revenue, but it is still the major source of product (especially when food service and manufacturing consumption is considered, in addition to retail).
- **Free Range.** Free range environments allow birds to roam freely over an outdoor environment during daylight hours. Free range farms are typically smaller than cage farms and they are more labour intensive. However, free range systems can potentially produce price premiums as a result of consumer preferences over animal welfare and perceived quality and health benefits.
- **Barn Laid.** In barn laid systems hens are free to roam, but are confined to an area under cover. Demand for barn laid eggs and their price premium has been moderating as consumers are unsure about the welfare differences between barn and caged hens.
- **Organic eggs.** Organic egg production systems require organic feed (no chemicals, growth stimulants or antibiotics), with hens usually raised in free range environments which must also be organically certified (having no chemical use or residues). Other types of eggs included in this segment include omega 3 and vegetarian eggs. Supermarket sales of organic eggs has declined recently, partly due to limited supply, and also as many (potential organic) consumers believe free-range offers a suitable natural and ethical alternative.
- **Specialty eggs.** Most eggs in Australia are produced from chickens. Eggs from other poultry species (such as ducks and quail) represent a very minor part of the market and are regarded as a delicacy or a special ingredient for baking.

In 2013, the Australian egg industry produced more than 400 million dozen eggs, with Australians now eating (on average) 207 eggs per person per year. In terms of retail, 151.8 million dozen were sold across Australia in 2013, worth \$642.6 million¹⁴. Figure 3.1 shows that all three of the major sectors (cage, barn and free range) have experienced rapid growth, free range production systems have substantially increased in market share over recent years. Approximately 54% of eggs are produced in cage layer farms, with free range being 36% and barn 9%. However, in terms of retail value, free range is now the largest segment in retail, with 45% of retail sales value, compared with 42% for cage and 10% for barn.

¹⁴ Retail World Annual Report 2013

Figure 3.1 Change in the Retail Value of Table Eggs, 2008-2013 by Production System

3.2.3 Major Businesses

None of the major table egg companies have a presence in the Wimmera Southern Mallee, although Farm Pride has a large free range company farm in nearby Loddon Shire. A medium sized layer production and grading business, Loddon Valley Eggs, is also located in Loddon Shire, at Bridgewater. The major businesses are:

Sunny Queen Pty Ltd, the largest table egg producer in Australia, with headquarters in Carole Park, Queensland, has company farms in Queensland, New South Wales and Victoria. Sunny Queen products cover the full range of egg types; fresh farm cage, natural grain (vegetarian), freedom barn-laid, free range and organic free-range eggs.

Alim Fresh Pty Ltd (trading in the industry as Pace Farm Pty Ltd), with headquarters in Minchinbury, New South Wales is a major producer with over two million layers and 650 employees.

Farm Pride Ltd, the only listed public company among the large layer industry businesses. Through recent acquisitions (including Nature's Dozen), this company now has around 18% of market share in the layer industry, and has processing capacity (ie grading and packaging) of more than 16,000 dozen per hour.

3.3 TURKEY INDUSTRY

3.3.1 Industry Trends

Like the duck industry, turkey production in Australia does not have a long history. It began as an off-shoot of the broiler meat industry, with turkey meat sales being very seasonal. However, over time the use of turkey meat has become more common year-round, especially in deli and pre-prepared meal applications. The industry generates over \$200 million per year from almost 5 million birds processed. The Australasian Turkey Federation has over 20 members.

There are two main producers: Inghams Enterprises dominates the market with, on average, 46,000 turkeys processed per week (60 to 65% of market share). The other, Baiada (trading as Steggles) processes over 15,000 birds per week. At least one large producer has no breeding flocks and purchases eggs for incubation and all large producers have contract growers. In addition, there are several small producers, all of whom grow their own birds. There are five dedicated processing plants and another 4-5 that process turkeys and chickens. White, hybrid turkeys are used almost exclusively and artificial insemination is practised rather than natural mating.

3.3.2 Turkey Production Systems

Larger turkey hatcheries supply contract growers while there are some smaller hatcheries which provide day-old turkey poults to backyard poultry keepers. The main commercial turkey used in Australia is the hybrid white bird which is the progeny of specially selected male and female parent stock. The males are chosen for their body conformation and fast growth rate while the females are chosen for their lack of broodiness, egg-production ability, and growth rate.

A hen may lay over 100 eggs/year but fewer than 90 poults will probably survive to processing weight from these eggs. Birds are held on separate breeder farms, each farm holding up to 7,000 hens. These layers are in flocks of up to 3,000 and are held in broiler sheds, typically 4 to 5 on large farms.

Straw, wood shavings and sawdust are the bedding materials used. These are normally changed at the end of each batch. The main challenges in the industry include environmental control, egg production consistency, brooding of poults, litter management due to caking and aggravated by drinking water spillage.

Free range turkeys, commanding a premium price, are produced on a few small farms. Some producers claim to have organically-grown turkeys but it is now difficult to obtain organically-grown feedstuffs and to conform to other requirements.

3.4 BROILER (CHICKEN MEAT) INDUSTRY

3.4.1 Industry Trends

Chicken meat has become Australia's most consumed meat. Over the past decade, per capita consumption of chicken meat is grew from 36.2 kilograms in 2003-04 to 40.0 kilograms in 2013-14¹⁵. The volume of chicken produced by the industry has increased at an average annual rate of 4.0% over the five years to 2013-14, accounting for the majority of poultry meat consumption. Growing demand for chicken meat has been supported by its cheaper price in comparison with other meats, and aided by dramatic improvements in production efficiencies. Demand has also been aided by a greater diversity in the range of processed chicken products available and the perceived health benefits of chicken relative to red meat. Industry revenue from processed chicken meat has reached \$6 billion in 2013-14.

The chicken meat, or broiler, industry has a low level of imports and exports. Very few live birds or live bird products are imported or exported, primarily due to strict quarantine requirements. Imports and exports of processed poultry are also very small (with the exception of niche products such as chickens feet). Total export value is currently estimated to be around \$10 million per annum.

3.4.2 Broiler Production Systems

The majority of businesses in the industry are individual poultry farmers, producing under contract to major processors. Poultry processors supply chicks, feed and veterinary requirements.

Meat chicken growers/farmers typically provide labour, sheds, power, water, and management skills during grow-out of birds from day-old chicks to processing weight. Consolidation by both poultry processors and poultry farmers is driving change within the industry. In the northern Victorian region the average broiler shed accommodates 30,000 birds, and new developments typically involve accommodating 100,000 birds in each shed. Most farms have 3 to 10 sheds. Grow-out farms sheds are highly mechanised with computer controlled temperature, humidity and air quality systems. Water and feed supply is also mechanised.

As is the case for table eggs, the broiler industry is experiencing rapidly expanding demand for 'all natural', free range and organic chicken products. Major integrated processor, Hazeldene's Chicken Farm, with contractors in the Wimmera Southern Mallee, has established a point of difference in its expanding free range and RSPCA approved products.

¹⁵ IBIS World Industry report 2014

3.4.3 Major Businesses

Three of the major poultry meat companies have a presence (through growers) in the Wimmera Southern Mallee (Inghams, Baiada and Hazeldene's). The major vertically integrated companies in the chicken meat (broiler) industry in Australia are:

Baiada Poultry Pty Ltd. Baiada became the largest privately owned Australian poultry company after it acquired the majority of Bartter Enterprises in 2009¹⁶. The company is headquartered in Sydney, and operates the majority of its broiler farms around north-west New South Wales, the Barossa Valley in South Australia, and Sydney's greater west. The company has processing plants in Sydney, Tamworth, Laverton and Adelaide, and processes up to 1.5 million birds per week.

Inghams Enterprises Pty Ltd, which has recently changed from an Australian owned family company to a subsidiary of United States' private equity company, TPG Capital. Inghams is headquartered in Liverpool in Sydney and it has breeder farms in all States/Territories except the Northern Territory. Processing plants are in New South Wales and the company's only Victorian processing plant in outer south-east Melbourne was destroyed by fire in 2010, and it is understood that the company intends to re-build the plant. Inghams processes around 2.3 million birds per week.

Hazeldene's Chicken Farm Pty Ltd is located in Lockwood, west of Bendigo, and is the most active company in the Wimmera Southern Mallee. It has a balance of company owned farms and contracted farms, with current expansion in its RSPCA accredited free range operations. The company processes around 560,000 birds per week and employs over 700 staff.

Turi Foods Pty Ltd is a private Australian company headquartered in Thomastown, Victoria. The company includes the La'Ionica business and Montefiore Cheese. As part of the acquisition of Bartter in 2009, Turi took over the Bartter-Steggles processing plant in Geelong, which is now known as Golden Farms. Turi processes around 750,000 birds per week.

3.5 POULTRY PRODUCTION IN WIMMERA SOUTHERN MALLEE

3.5.1 Duck Production

Luv-a-Duck has 30 contracted growers and 7 breeder farms. There are no company owned grower farms, as yet. All the breeder farms are located close to Nhill. Luv-a-Duck is one of two major processors in Australia (Pepes in New South Wales is the second).

Luv-a-Duck is an ethical and environmentally responsible company and a very good 'corporate citizen' in regional Victoria, and is justifiably proud of its achievements and contributions to the regional economy.

With the recent sale of Glenloth Game, and the redirection of that business to processing of emu products, all businesses in the duck sector are part of the Luv-a-Duck supply chain.

¹⁶ An ACCC ruling prevented Baiada from acquiring all of Bartter Enterprises, and the Victorian operations were sold to La'Ionica (Turi Foods)

3.5.2 Table Egg Production

There are about 300 commercial egg farms in Australia, of which about 60 are in Victoria. The commercial poultry strains used in Victoria include the Hy-Line Brown, Isa Brown, and Lohmann hens (the last being used as a targeted free range breed). Each of these strains lay 260 to 300 eggs per year. The Hy-Line Brown and Lohmann strains are both available from elite bird supplier companies in Huntly, north of Bendigo.

The table egg farming sector operates intensive shed systems with temperature, humidity and air quality controls, a guaranteed water supply and strict nutrition formulations (although a mash formulation is used for layers, whereas pelletised feed is used for broilers). Most of these capital equipment items are required even if the production system is free range. Capital expenditure for shed automation is required in the table egg industry; automated conveyors for egg collection and, often, for manure disposal. These are installed in caged and barn operations and, in the most modern facilities even in free range environments, since birds are housed at night and adverse weather conditions in sheds and lay in nests.

In a broad sense, the Australian table egg layer industry is not only moving away from metropolitan-rural fringe locations, but it is also moving further north in eastern Australia, with the 'centre of production' now approximately located in northern New South Wales. This trend is partly due to the connections of the major businesses in the sector, but also due to the greater year-round grain production capacity in the northern climates.

The expansion in free range product in the table egg industry has brought an increased focus to new growing districts, and the Wimmera Southern Mallee is one of the areas where growers are taking up contracts with egg processing companies. To date, this has only included growers with existing shed infrastructure (such as growers who formerly had contracts for turkey production), but the integrated egg processing companies argue that the economics support medium to long term new investment in sheds and other infrastructure for table eggs.

3.5.3 Turkey Production

Greatest demand for whole turkeys is at Christmas and is usually for smaller birds (4.5 to 6.5 kilograms live weight). For large growers, this may be only 10% of production and is predominately hens. For the rest of the year, demand is for further processed products, mainly from heavy males (toms), in the form of boned or semi-boned products. Products include cooked half breast, breast slicing roll, frozen breast roast, cooked buffe and thigh roast. Turkey meat, especially whole birds, is expensive in Australia compared to the United States of America where per capita consumption is very high and it competes favourably with broiler meat. In Australia, feed contributes over 60% to production costs, while the cost of raising poults is about 15%.

The closure of Goldfields Turkeys in St Arnaud at the end of 2013 has resulted in the loss of one of Wimmera Southern Mallee's only integrated poultry producer/processor companies. Goldfields had up to 17 contract growers and its own corporate grower farms, an export accredited abattoir, and value adding arrangements for frozen and cooked turkey products. The company also processed a number of 'spent hens' from the table egg industry for smallgoods and lower-value commercial meat applications. Goldfields Turkeys had once been a subsidiary of the public company Petersville-Sleigh and then Adsteam Ltd, until a management buyout was implemented in the mid-1990s.

The remaining turkey businesses in the Wimmera Southern Mallee are Deutchers Turkeys, a small, independent and integrated producer and processor in Dadswell's Bridge, Rural City of Horsham, and Rainbow Valley Turkeys, an importer of elite genetic stock and breeder, located in St Arnaud, Northern Grampians. Rainbow Valley Turkeys has recently been acquired by Australia's largest integrated poultry meat company Baiada Poultry. Baiada and Inghams are the two major companies in the turkey industry, and they are also the largest two integrated meat chicken (broiler) companies.

3.5.4 Broiler Production

The broiler industry has been characterised by restructuring in the past few years; large-scale mergers and acquisitions which have driven productivity levels higher and allowed leaders in the industry to take advantage of economies of scale. Two of the industry's largest players, Baiada Poultry and Inghams Enterprises, account for just over 50% of industry revenue. Much of the growth achieved by these enterprises has been through merger and acquisition activity. In July 2009, Baiada acquired the most of the operations of Bartter Holdings¹⁷, which was the second-largest chicken meat processor in the industry. Global players have also entered the industry, with the 2013 acquisition of Inghams Enterprises by United States based TPG Capital, and the entry of international genetic stock supplier Aviagen Ltd.

Inghams has a modest presence in the Wimmera Southern Mallee, with a breeding farm, but this facility is on the market.

Hazeldene's Chicken Farm is the major integrated processor with existing contractors in the Wimmera Southern Mallee, and with interest in securing more.

Small broiler and game bird processors, Glenloth Game/Free Range (within the region) and Wangara Game/Bendigo Gourmet Poultry and Game have recently left the industry, creating a gap in the production of niche broilers, spitchcock, poussin, quail, squab and pheasant for specialty retail and food service markets.

3.6 POULTRY SUPPLY CHAINS

3.6.1 Ducks

About 95% of meat ducks produced are consumed in domestic markets. Asian restaurants are the largest market for whole birds, but there is also growing demand from fine restaurants and for specialty cuts and value added product in supermarkets. Luv-a-Duck has a diversified market policy which ensures that the major supermarkets each have no more than 12% market share of Luv-a-Duck product.

Processing of the duck is similar to that of chicken, except for the waxing of the duck during the removal of fine feathers. After the ducks are processed they are distributed throughout Australia, and a small volume is exported.

¹⁷ An ACCC decision prevented Baiada acquiring all of Bartter's operations, and Victorian facilities in Geelong were acquired by La'Ionica (subsequently acquired by Turi Foods).

The Nhill plant employs 120 permanent staff and 20-30 casuals in processing and substantial value-adding (through to pre-cooking and packaging), and there are 24 livestock operations staff (including the hatchery). There is a head office executive and sales and marketing team of 25 permanent staff in Melbourne and a shared depot in Western Australia.

3.6.2 Turkeys

There are five dedicated turkey processing plants and 4-5 that process turkeys and chickens. White, hybrid turkeys are used almost exclusively and artificial insemination is practiced rather than natural mating.

Rainbow Valley Turkeys, a major grower, produces about 650,000 turkey eggs/year. Many of these are sold to producers for hatching and some of the poults are purchased by small farmers for growing out. There is a small export market for eggs to Taiwan.

3.6.3 Table Eggs

At present there are two supply chains in the table egg industry in the Wimmera Southern Mallee, both in free range production:

- Green Eggs is a medium sized integrated producer, packer and marketer of free range eggs, located in Great Western in Northern Grampians.
- Two growers in Buloke Shire who have new contracts with Kinross Farms (with processing facilities in Kinglake West) to upgrade their former turkey production facilities and produce table eggs.

A third small egg producer (McGillivray) produces, packages and markets product independently.

3.6.4 Broilers

Australia's meat poultry industry is more vertically integrated (through ownership of several links in the supply chain or supply contracts, or both) than other agribusiness sectors (in which growers and processors tend to operate with a level of independence).

At present, Inghams has a breeding farm in the Wimmera Southern Mallee, and Hazeldene's Chicken Farm has contracted free range growers.

The poultry industry supply chains are summarised in Figures 3.1 and 3.2. The duck supply chain is the most geographically and functionally integrated chain within the Wimmera Southern Mallee of all the intensive animal industries.

Figure 3.1 Sample Poultry Industry Supply Chain: National Chicken Meat Industry

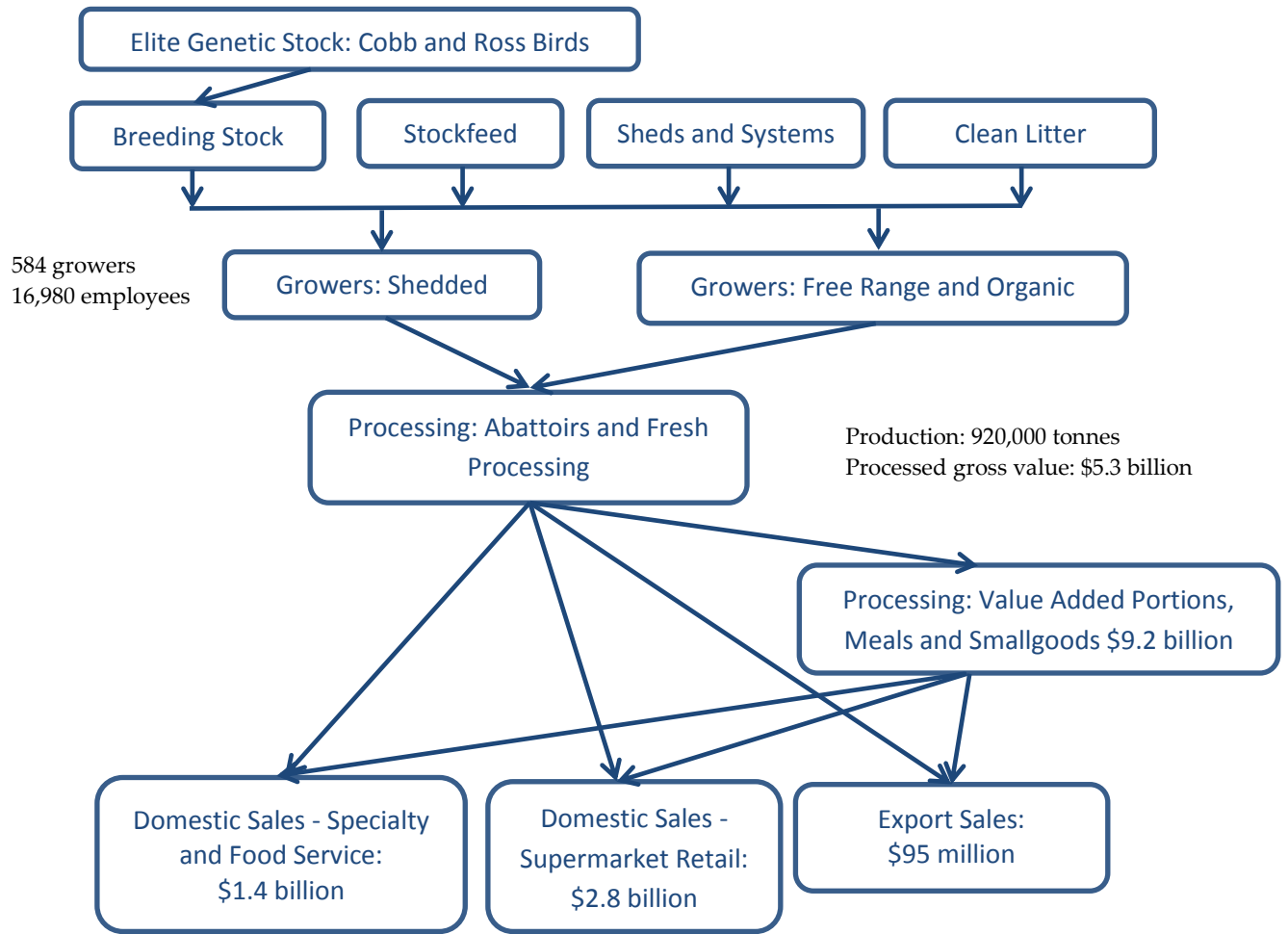
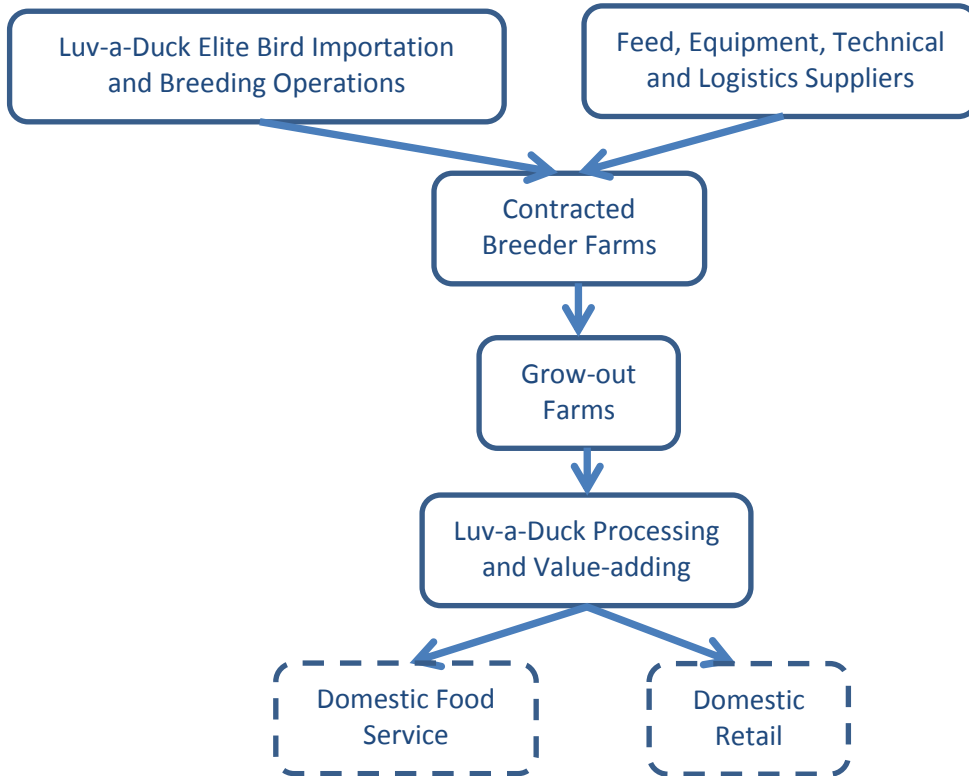


Figure 3.2 Wimmera Southern Mallee Poultry Industry Supply Chains

Duck Industry Supply Chain



Other Meat Bird (Turkey and Broiler) Industry Supply Chains

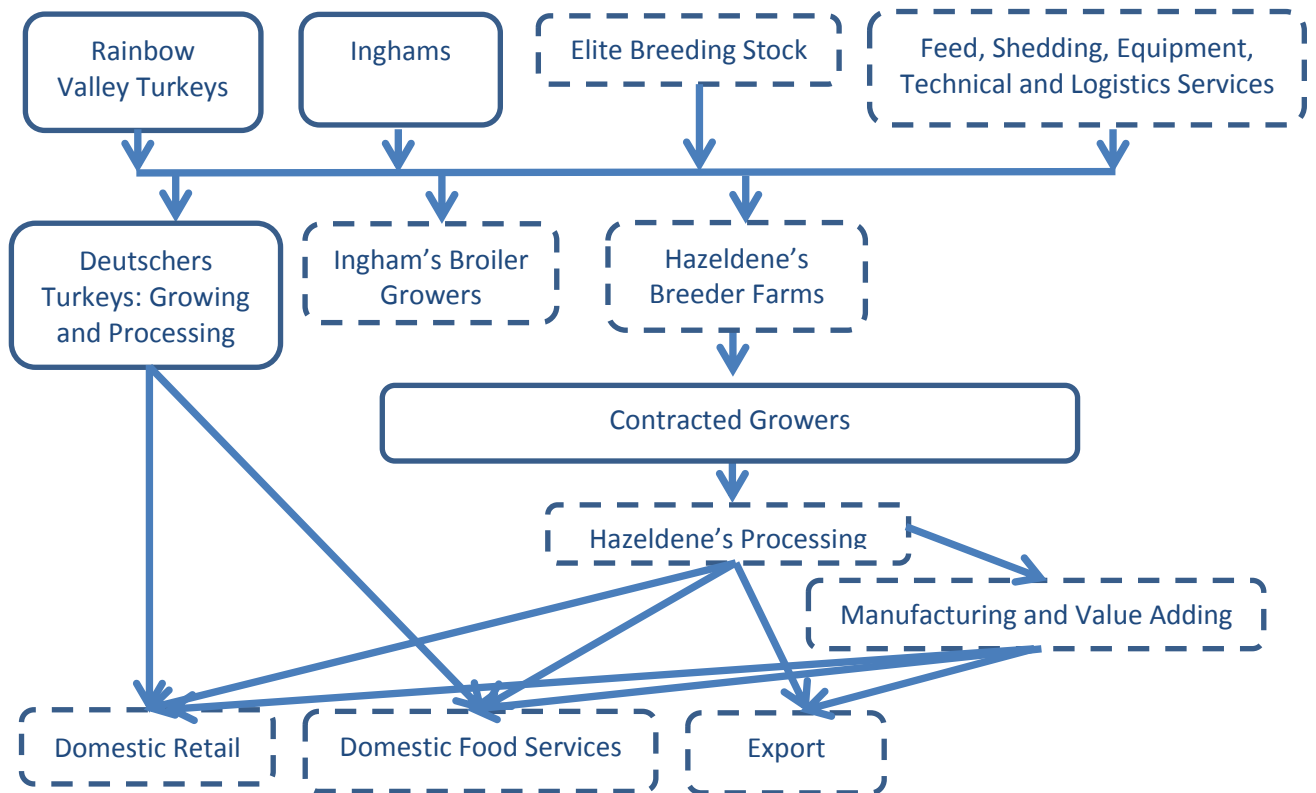
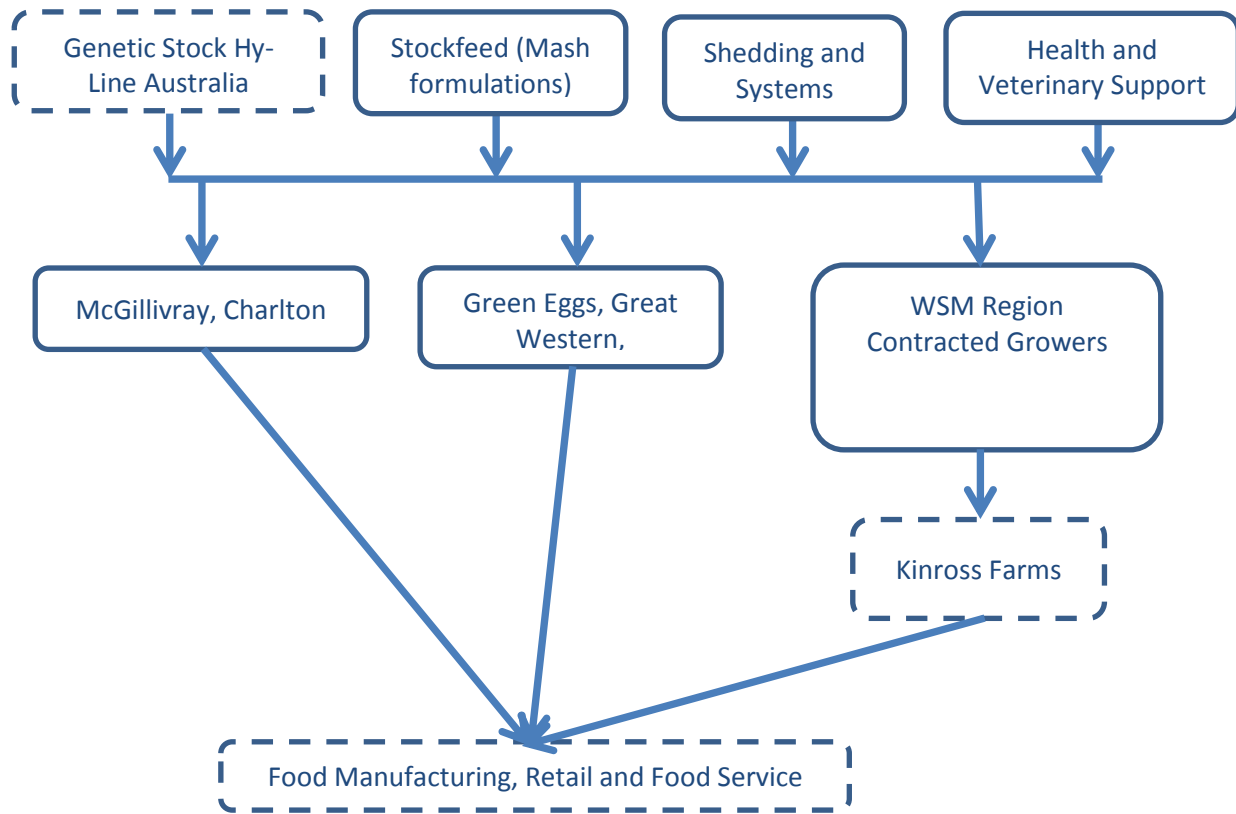


Table Egg/Layer Industry Supply Chains



National Summary

Total table egg production enterprises: 151 (and 239 establishments)
 National domestic annual demand for eggs \$575 million
 Table egg annual production: 27.9 billion dozen
 Total broiler production 920,000 tonnes
 Total broiler production enterprises: 318 (and 584 establishments)
 National demand for poultry meat (chicken, ducks, turkey and game): \$6 billion

Wimmera Mallee Supply Chain Summary

Total breeding stock production: 13.05 million fertile eggs, poults and chicks
 Total meat bird (chickens and turkeys) production: 830,400 kilograms.
 Total table egg production: 2.98 million dozen.
 Farm gate and value added production in the Wimmera Southern Mallee region: \$16.2 million

Photo 3.1 Shed Fitout for Free Range Layers

3.7 OPPORTUNITIES AND OUTLOOK

In the past two decades, the rate of regionalisation of Australia's poultry industry has escalated considerably. The adoption of poultry meat as Australia's most consumed meat, re-emergence of table eggs as acknowledged healthy products, and the fact that Australia remains closed to fresh poultry product imports, have all ensured that the poultry industry is growing. Another important trend, in terms of regional development opportunities, is that poultry production is under extreme pressure in its original heartlands on the fringes of major metropolitan areas (such as the Mornington and Bellarine Peninsulas around Melbourne and the Macarthur district in the south-west and the Hills district in the north-west of Sydney).

Poultry farming and market gardens were traditionally intensive agricultural industries that located in the urban-rural fringes of major cities, providing an effective use of higher value land and close proximity to markets. This concentration is now dispersing and investment is shifting to more distant rural areas which offer:

- Greater security for the substantial investment that is required in modern poultry production (without pressure from urban development/urban encroachment).
- Bio-security (including adequate buffer distances to adjacent properties and other land-uses, lower exposure to disease risks, and interactions with other industries).
- Proximity to stock feed (predominantly grain) which is the major operating cost in poultry production.
- Access to broadacre growers who have the expertise and motivation to consider diversification into poultry production as an additional enterprise which can complement and add to the sustainability of their overall farming activities.

The Wimmera Southern Mallee region offers potential to accommodate both new and expanding poultry businesses, with the business investment protected by statutory planning and bio-security controls. Poultry is not an industry which can be readily developed in precincts of similar producers. Indeed, although poultry production is intensive, it is most sustainable in a broadacre environment. Access to feed supplies, water and power complete the industry's major needs.

The opportunities are somewhat offset, broadly, by the fact that Australian poultry industry sectors are not only moving away from metropolitan-rural fringe locations, but are also moving further north in eastern Australia, with the 'centre of production' now approximately located in northern New South Wales. This trend is partly due to the connections of the major businesses in the sector, but also due to the greater year-round grain production capacity in the northern climates.

Conclusions on the opportunities and outlook for poultry industry sectors are as follows.

Ducks

- The region is already one of two major production areas, in an industry with potential to expand through growth in Australia's multicultural population. The national population is projected to reach 38 million residents expected by 2050, adding 15 million to the current domestic market, of which up to 9 million will be new net-migrants. The majority of new arrivals will be from Asian and European countries, where duck is an important and regular part of the cuisine. Projected further growth in Australia's food service sector will also favour increased consumption of duck.
- Continuing to attract and maintain an effective labour force for the Luv-a-Duck supply chain will help to expand and sustain Wimmera Southern Mallee regional activities.
- The potential for expansion in other areas of poultry production (and other intensive livestock) in the region should support the viability of the duck industry, provided mutual biosecurity interests are not compromised. This assistance would come from collaboration (in research, advisory services, value added product development, waste and by-product management, and production systems), labour force development, efficiencies in inputs (such as stock feed and litter) and logistics services.

Other Poultry

- Although they were small to medium businesses, the loss of Goldfields Turkeys and Glenloth Game/Free Range from the region, as well as two other nearby processors contracting in the region (Wangara Game, Bendigo and Davis Poultry, Maryborough), has created a gap in Victoria's participation in turkey and game processing (including squab, quail, pheasant, rabbit and venison). There is an opportunity to establish at least one integrated growing-processing-marketing supply chain for these products, particularly as a diversification option for broadacre growers. The food service sector is not being adequately supplied with Victorian regional product in these areas.
- The growth in free range production for table eggs and chicken meat is a particularly strong and current opportunity to enable Wimmera Southern Mallee growers to diversify their cropping enterprises by adding a contracted breeding or grow-out production activity. The majority of the region is now well suited to meeting most of these industries' requirements:
 - Biosecurity
 - Water security
 - Suitable climate
 - Proximity to feed supplies
 - Production expertise and track record.

The limiting factor of proximity to the contractor's processing plant is of importance, but appears to be less significant than the combined attributes of the region.

Ducks and Other Poultry

- Stockfeed for the poultry industry is already manufactured in the region, but is close to capacity and could be expanded as part of integrated supply chains. The meat sectors of the industry require pelletised stock feed to be manufactured (with a range of differing rations at points in bird growth, and for differing species) and the egg or layer industry sectors require a mash feed to be manufactured, or mixed.
- Bio-mass processing to produce thermal or other forms of renewable energy, and fertilisers, is an emerging opportunity that could best be developed through joint action among members of the poultry industry across the Wimmera Southern Mallee and Northern Victoria. Used litter from sheds, dead birds, spent hens, and hatchery waste are all by-product streams that could be contributed to create new revenue streams.
- Shared approaches to water savings and usage, renewable energies and other production efficiencies should be addressed on a regional basis (Wimmera Southern Mallee and Northern Victoria), in partnership with research and tertiary institutions. This would extend some of the project work undertaken during the term of the Australian Poultry Cooperative Research Centre.

4. LOT-FED LAMB PRODUCTION AND OTHER INTENSIVE LIVESTOCK

4.1 INDUSTRY PROFILE

4.1.1 Sheep Production Trends and Projections

The sheep industry is one of Australia's oldest, with some sheep arriving with the First Fleet in 1788. However, it was a consignment of Spanish sheep in 1797, destined to be forerunners of the Merino, which effectively launched the industry in Australia.

The size of the Australian sheep flock has fluctuated significantly over the years in response to varying seasonal conditions, movements in wool prices and the relative profitability of other enterprises. The national sheep flock peaked in 1970, and exceeded 100 million for the second half of the twentieth century. Reduced demand for wool, drought conditions in the first decade of the twenty-first century and general industry restructuring has impacted on the nation's level of sheep production and the flock dropped to 68.1 million in 2010 (its lowest level in over 100 years). Australia's sheep flock is estimated to be 71.8 million in June 2014, although forecast to re-build to 75 million by 2018-19¹⁸.

Sheep farmers have experienced strong revenue growth in the past three years, as the long-standing drought broke. Industry revenue grew at an estimated average annual rate of 5.1% over the five years to 2013-14, following the industry's recovery. The rapid revenue growth that occurred as the rains returned has levelled out over the past two years. In 2013-14, industry revenue is expected to be up by 3.4%, reaching \$3.3 billion¹⁹.

Australian lamb slaughter, as a percentage of the total sheep flock, has increased steadily over the past two decades. This reflects a shift from wool into prime lamb production in the Australian sheep industry. Lamb slaughter is forecast to reach 21.5 million head in 2013-14, the highest since 1971-72 when the Australian sheep flock was around 180 million head. Drier seasonal conditions across parts of eastern Australia have led to a greater number of lambs entering the market, with farmers less willing to hold on to lambs as pasture conditions deteriorate. Reflecting this, average carcass weights have declined by around 3 per cent year-on-year in the first half of 2013-14²⁰.

Australian lamb slaughter is forecast to fall by 5% in 2014-15 to around 20.5 million head. This forecast reflects an expected fall in the number of spring lambs and a reduction of breeding stocks following higher slaughter rates over the past two years. Lamb slaughter is forecast to rise over the remainder of the outlook period to around 21.6 million head by 2018-19, reflecting projected growth in breeding stocks.

Reflecting the forecast decline in lamb slaughter, lamb production is forecast to decrease by 4% to 445,000 tonnes in 2014-15. Over the medium term, lamb production is projected to increase to around 469,000 tonnes by 2018-19, supported by expected higher slaughter and an assumed increase in slaughter weights.

¹⁸ ABARES Agricultural Commodities March 2014

¹⁹ IBIS World Sheep Farming Industry Report, March 2014

²⁰ ABARES 2014

In the most recent National Australia Bank (NAB) commodities report²¹ tightening domestic supply and greater export demand are predicted to keep heavy lamb prices at around 570 cents per kilogram (enough to support the costs associated with supplementary feeding to achieve market specifications).

The industry's performance over the next five years will be largely determined by external factors, primarily weather conditions. Under average seasonal conditions, industry revenue is forecast to grow at an annualised 0.9% over the five years through 2018-19, to reach \$3.5 billion. Continuing high prices for lamb and wool will help in sustaining the industry.

4.1.2 Rationale for Lot Fed Lamb

Lot feeding is the practice of housing animals in a confined area and providing all nutritional requirements in the form of rations. Lot feeding enables lamb producers to achieve consistent supply of quality lamb to meet market specifications for weight and fat score. It also provides an opportunity to sustain production during times of low pasture availability or achieve rapid growth when feed prices are low. For sheep, rations typically comprise a mix of barley, oaten hay, oats and lupins, although other cereal grains and feedstuffs are used dependent on price and energy content.

Lot feeding is often used as part of general farm management, particularly to maintain stock during drought and to keep stock off establishing pastures at the break of the season. Lot feeding has been considered as, potentially, offering a profitable enterprise in its own right, finishing fat lambs for market. Feedlotting should be a profitable activity when the sale price of a finished lamb is higher than the cost of store lambs plus feedlot costs.

At times of low feed grain prices and depressed wool prices lot feeding becomes an attractive option if farmers with prime lambs are prepared to devote time setting up a feedlot. Wool producers can also benefit from management advantages by using a feedlot to reduce graining pressure and protect the ground from erosion caused by a loss of vegetative cover.

Like any new enterprise careful attention needs to be paid to budgeting, marketing and management, but it is possible to make attractive premiums even with low lamb prices. Feedlotting creates an opportunity to value-add to poor feed grain prices.

The main benefits of lamb lot feeding are:

- Animals can be delivered to suit a particular market's specification for weight and quality.
- Continuity of supply can be improved (finishing lambs at times of the year that are traditionally non-seasonal).
- Seasonal variations clearly have an impact on lamb prices for the domestic market, so if producers can deliver when there is a shortage they can take advantage of higher prices.
- Lot feeding allows farmers to establish more attractive supply chain arrangements and premium markets away from the traditional sale yard methods (which still account for over 70% of prime lamb sales).

²¹ NAB June 2014

- A management tool to help control feed availability, limit soil erosion and seed contamination, improve pastures, and improve stock condition. Keeping stock off pasture for four-six weeks allows it to become well established at the break of the season and stubble can be more easily maintained. These benefits may also be achieved by a broader strategy of sheep 'containment' (in semi-intensive pens and paddocks) without the infrastructure needed in a formal feedlot.

More broad sheep 'containment' can be used to achieve many of the objectives of a feedlot, in varying circumstances and for different purposes.

- If the season has been poor, containment enables local growers to market prime lambs when their numbers are generally low and when prices received are likely to be high. The supplementary feeding permits the use of high grain rations irrespective of the seasonal conditions, provided the increased return from finished lambs justifies the extra expense.
- Containment can be used at the break of a season. At the break of the season sheep have high feed requirements and they can cause considerable damage to young establishing pastures. It can be of benefit to remove sheep from germinating pastures and feed them in an area where pastures will not be damaged. This practice can also be considered as 'deferred grazing'.
- In drought conditions: When there is a risk of erosion if grazing continues; when bought fodder contains weed seeds; when the paddock is so bare that the sheep are still losing weight on a full drought ration; and when grazing will cause permanent damage to the pasture, such as removal of valuable seed reserves or death of young plants.
- To allow bought sheep to empty-out of weed seeds before being put in a paddock.
- For growing young ewes for earlier joining.
- To allow more profitable use of paddock space.
- For joining ewes in feedlot to maximize sire performance.

4.2 LOT FED LAMB PRODUCTION IN WIMMERA SOUTHERN MALLEE

Feedback from stock agents, processors and industry specialists suggests that lot feeding has a relatively low priority on the industry's agenda at present. Although the benefits of lot feeding have been promoted for more than a decade, it is largely used by broadacre growers as an opportunistic alternative, and supplement, to paddock finishing of stock. In the Wimmera Southern Mallee, only 2-3 business operators are pursuing lot feeding of lambs as a stand-alone business opportunity in its own right. There are many others adopting a 'watch and monitor' approach, and have expressed interest in future collaborative participation in lot feeding initiatives.

Stock agent and specialists feedback also revealed:

- Opportunistic lot feeding is very limited at present, fewer than 1% of producers are considered to be using containment. Although few growers would say they are lot feeders, supplementary feeding at the end of the stubble season makes good sense.
- Most people have sold available grain, restricting the ability to supplementary feed.
- All the corporate farmers in the Wimmera Mallee Pipeline area concentrate first on cropping. However, the pipeline has provided invaluable security to the paddock raised prime lamb industry.
- Lot feeding is simply not sufficiently financially attractive at present. There may be renewed opportunity in the next 12 months if there is a strong winter price premium.

The major export market for Australian lamb from the Wimmera Southern Mallee region is currently the Middle East, and this market has a preference for leaner carcasses (in the range 16-17 kilograms dressed), which is not a target weight that requires lot-feeding, for the majority of sheep breeds produced in Australia. Indeed, a Middle Eastern (Qatar) owned corporate agribusiness company with a major operation in the Wimmera region (Hassad Australia) has stocked its West Wimmera property with 55,000 Awassi breed ewes (a Middle Eastern breed developed in the Syro-Arabian desert), with lambs for live export to reach a target dress weight of 16-18 kilograms.

In the short to medium term, Australia's lamb export market growth is likely to shift towards northern Asia, and to China in particular, which would demand heavier lambs (in excess of 20 kilograms dressed) potentially creating a greater demand for lot fed animals. However, processing companies are cautious about increasing capacity to service the expanding north Asian market, due to historic variations in Australia's ability to supply. Processing plants may be near to capacity, but there is an understanding that threats to their future viability are "only a drought away". Business growth through improved quality, value adding, and small increases in throughput are considered the most appropriate strategies. Processors emphasise that Australia has adequate processing capacity for the livestock available, and if there is a problem with supply, further rationalisation of facilities is likely. Conversely if Australia reduced, or stopped, live sheep exports, the demand for processing in Australia could increase by 10-15%.

It is understood that corporate livestock investors consider the west of the Wimmera Southern Mallee region as an excellent location, offering:

- Very sound and healthy livestock country.
- Operational security and biosecurity (including low disease exposure).
- Cheaper land entry-costs (somewhat offset by freight costs).
- Fodder crop flexibility (barley, wheat and Lucerne), despite low rainfall, this flexibility helps in drought proofing the area.
- One of few places in Victoria where some real scale can be achieved in extensive livestock.

Birchip Cropping Group (BCG) conducted a recent survey²² of its Bestwool/Bestlamb sheep producers to determine what growers were doing in the region with respect to lamb finishing, following the installation of the Wimmera Mallee pipeline and its supply of good quality water (available at all times). Lamb finishing involves supplementary feeding to meet production objectives, usually by some form of lamb containment, potentially including purpose built feedlots (but the latter is rare in the region).

The BCG discussions and surveys covered 30 businesses across the Wimmera-Mallee region. This survey was able to capture responses from a large area, and included some large sheep producers within these areas. The total area managed by survey participants was 82,948 hectares (28 respondents), and they manage 70,070 sheep (25 respondents) across this area. In 2012 a total of 33,090 (27 respondents) lambs were finished, with only 27% of businesses at full capacity. The majority of the farmers surveyed indicated that the most limiting factor to them managing their lamb finishing business at full capacity is feed availability and price over summer. The lack of (and unreliable nature of) rainfall over the summer period directly influences the availability of both green (including lucerne production) and dry paddock feed. This affects the price of feed (grain and hay prices), whether buying in or making decisions about selling or using conserved feed. It also impacts on the ability to meet nutritional demands of pregnant ewes, lambs at birth or finishing lambs.

²² McMillan, D and Frischke, A (July 2013) Impact of the Wimmera/Mallee pipeline and potential lamb industry development. Birchip Cropping Group.

Other issues identified in the BCG survey impacting on lamb finishing practise were predation of lambs, labour requirements, availability of agistment land and the cost of buying lambs to finish. In response to a specific question on whether growers considered lamb finishing a core part of their business:

- 23% of producers viewed specific lamb finishing practices as a core part of their business
- 77% considered finishing lambs as an opportunistic part of their business (to respond to both market trends and feed availability).

The BCG survey also noted:

“When it came to whether producers in these regions felt that the pipeline had improved their capacity to finish lambs there were mixed results. The majority of the farmers (70%) could see that the pipeline had directly improved their ability to finish lambs, 23% responded that it had not made a change, and the remaining 7% were unsure whether it has or not”.

Ongoing research by BCG is reportedly finding that there is a strong interest in lot feeding of lambs, but most growers have realised it is a complex activity (even a distinct enterprise) and that the economics are not necessarily as strong as might be expected. For example, some trials in pens/lots have found that lambs need to be grown to 35 kilograms before transferring them to a lot (or a containment area), with a finishing target weight of 46-47 kilograms (to give a dressed weight of 26-27 kilograms). BCG’s trials suggest that, below 35 kilograms, the ruminant stomachs are insufficiently developed to cope with grain rations. This is not an insurmountable barrier to earlier stage lot feeding arrangements. It could be overcome by ‘backgrounding’ (such as supplementary feeding of the lambs while in the paddock) or by genetic improvement to select appropriate traits, but these possible solutions will take further research and time.

The few feedlot ‘business entrepreneurs’ in the Wimmera Southern Mallee (who believe lot feeding of lambs is a discrete enterprise in its own right) confirm the BCG research from their practical experience, suggesting:

- *“Not everyone can do it. Running and feeding lambs to a pre-defined cost and product specification, and getting them out on-time is a specialisation”.*
- *“Most of the containment yards and feed lots set-up in the region so far could be better designed: They tend to have just been add-ons.”*
- *“The local industry is so opportunistic, it is hard to promote lot feeding as a general and continuous business”.*
- *“Genetic improvement needs to have an important role in the future development of lot feeding”.*

4.3 THE SHEEP AND LAMB MEAT SUPPLY CHAIN

4.3.1 Supply Chain Mapping

Growers in this industry are mostly small to medium businesses employing few 20 people. More than half are non-employing farms, relying on farm owners and family members instead of hiring outside workers. Often, these farms have been run by the same families for many years, passed down through generations. As a result, the number of farms in the industry has remained relatively stable. A few corporate farming operations have established in the Wimmera Southern Mallee, but most of these are more focused on cropping than livestock, to date. Indeed, even among the family farms, cropping is still the main game across most of the region. While farms that rely on hired workers tend to be commercialised operations, a number of large family-owned farms also rely on additional labour, and the level of outsourcing or contracting is increasing.

Sheep production, for both meat and wool, is undertaken across all municipalities in the Wimmera Southern Mallee region, contributing \$336 million per annum in farm gate income. The production of lambs and sheep for meat contributes the major share of this farm gate income (\$187.4 million, or 56%). Figure 4.1 reveals that West Wimmera has the region's greatest production of sheep and wool (32.0% of the total), with Yarriambiack having the least (7.3%).

Figure 4.1 Sheep and Lamb Slaughter and Wool Farm Gate Values: Wimmera Southern Mallee 2013 (\$ million)

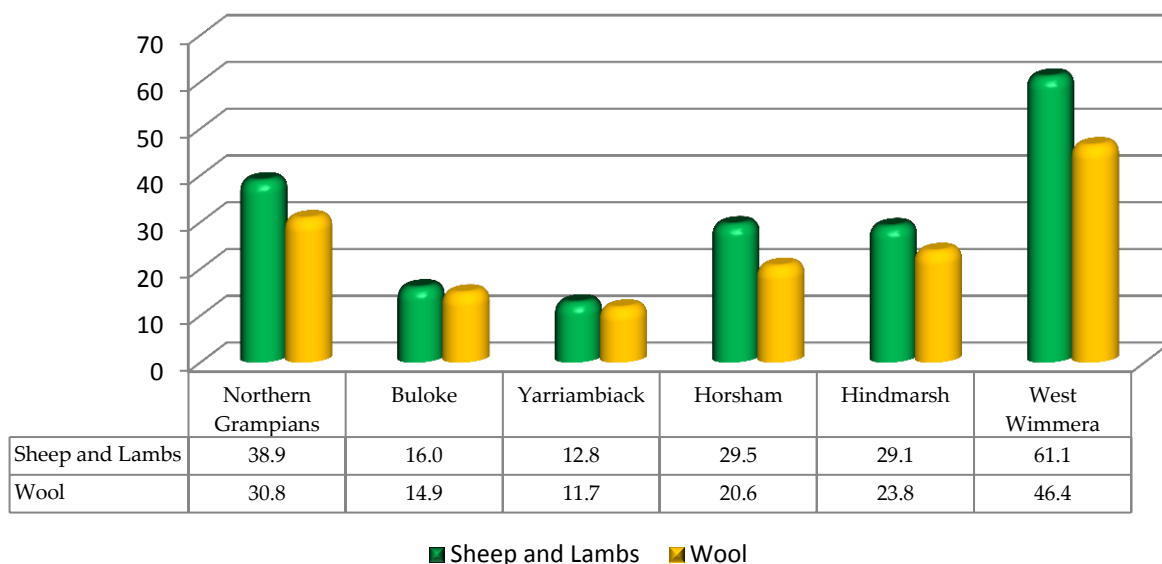
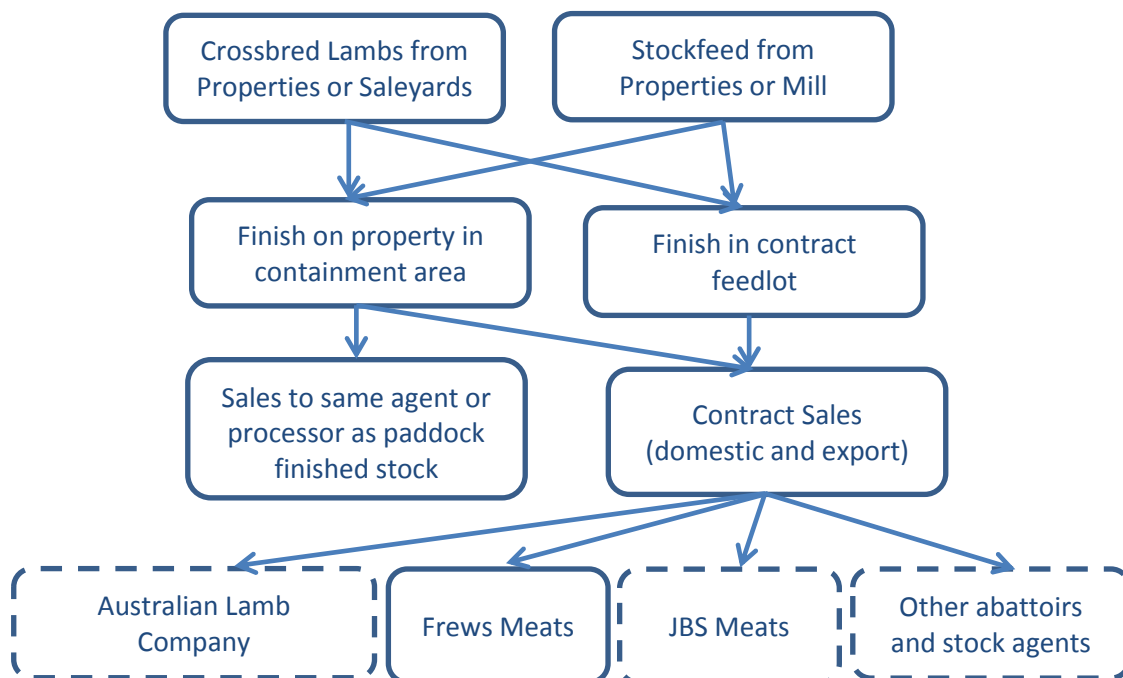


Figure 4.2: Lot Fed Lamb Supply Chains



Wimmera Mallee Supply Chain Summary

Total regional lamb and sheep annual production: 39,040 tonnes dressed

Total regional meat value: \$187.4 million.

Total Wimmera Southern Mallee production processed within the region: \$53.0 million

Current lot feeding and containment production: 842 tonnes dressed

Current value of lot fed lamb: \$4.72 million

Value gained in feedlot/containment: \$1.32 million

4.3.2 Major Businesses in the Regional Supply Chain**The Frew Group**

The Frew Group of Companies started in 1981, founded by Arch Frew, and is now led by son Robert Frew. The company has three operational sites:

- Frewstal Pty Ltd, Stawell, lamb processing facility (purchased in 1984).
- Frew Trading Wholesale Pty Ltd, a meat distribution centre, in South Australia (constructed in 1999).
- Frew Melton Pty Ltd, a meat value adding and distribution centre (constructed in 1998).
- Frew Kyneton Pty Ltd, Beef processing facility purchased in 1993.

Frew's supplies Australia's major full service supermarket chains, and is working on further expansion of value added products (such as minces, sausages, and cooked and frozen ready to eat products).

Other significant supply chain 'managing' businesses in the sheep and lamb meat industry, which do not have a facility in the Wimmera Southern Mallee, but are involved in some of the downstream supply chains are:

JBS Australia

JBS Australia is a foreign-owned Australian proprietary company that generates the majority of its revenue from the Meat Processing industry. In 2013-14, JBS Australia is the industry's leading meat processor. The company is owned by the world's largest meat company, Brazil-based JBS Friboi, which entered the Australian market in July 2007 when it acquired Swift Australia Pty Ltd, a subsidiary of US-based Swift & Company. JBS Friboi changed the name to JBS Australia in January 2011. The company is headquartered in Riverview, QLD, and employs more than 6,500 people throughout Australia.

JBS Australia is involved in a wide range of meat production in Australia. It owns five feedlots and 11 meat processing plants located in Queensland, New South Wales, Victoria and Tasmania. JBS Australia has a daily slaughter capacity of about 8,800 cattle and 25,800 small stock, which includes sheep, pigs and calves. JBS Australia's production has strength in the local retail market and the export markets of the United States, Japan and South-East Asia. About 85% of the company's output is sold overseas each year.

Over the past five years, the company has expanded rapidly, with the strategic acquisition of a number of meat companies. In late 2009, JBS Australia purchased Tatiara Meat Company in Bordertown, South Australia, and it is this plant which is most relevant to the producers in the Wimmera Southern Mallee. The purchase secured JBS Australia's position in a major lamb-producing region and made it the largest lamb processor in Australia. The plant employs about 400 workers and generates revenue of about \$200.0 million. JBS owns and operates four cattle feedlots and has a capacity of about 200,000 cattle per annum.

JBS Australia, apparently established a dedicated lamb feed lot a few years ago, built to provide continuity of supply (not price premiums) but it was unsuccessful and has been discontinued.

Midfield Meat International Pty Ltd

Midfield Meat is a medium-size meat processor based in Warrnambool. Formerly part of Midfield Pastoral Pty Ltd, the business was separated into a single entity after Midfield Pastoral became solely a pastoral business in 1975. Today, the company's core business is meat processing, employing over 730 staff members across Midfield Meats, Southern Grande Beef, Merri Valley Quality Australian Lamb and 246 Lamb. The Midfield group also includes transport, bull beef and co-products segments.

It operates one abattoir in Midfield, where the process and boning floors have the capacity to handle over 250 carcasses per shift. A vertically integrated operation, Midfield is heavily engaged in meat wholesaling. As a licensed meat exporter, the company distributes its meat products both domestically and internationally. Midfield produces halal meats, allowing access to a greater market range. Increased competition from the United States, however, has eaten away at the company's market share in Japan. In 2011, Midfield expanded its exports to Iran and Egypt, taking advantage of the rising demand from these markets.

Fletcher International Exports Pty Ltd

Fletcher International Exports Pty Ltd (FIE) is an Australian family-owned company that is headquartered in Dubbo, NSW. FIE has operated a processing plant in Dubbo, NSW, and Albany, WA, for several years. The Dubbo plant is one of the world's largest sheep meat processing plants, employing around 750 people, the plant operates seven days per week and has a weekly sheep slaughter capacity of 40,000 head. In late 2003, the company expanded its processing capacity with the purchase of Mudgee Regional Abattoir in New South Wales. The operation was the last government-owned abattoir in the country. The company also runs an abattoir in Albany, WA.

Although its principal activity is meat processing, the company has expanded into related sheep product processing as a means of adding value. In 1995, FIE became the first company to combine wool and meat processing, by adding a wool scouring and top-making plant to its Dubbo site.

Other significant processors with supply connections to the Wimmera Southern Mallee are:

- **Australian Lamb Group (ALC)** ALC acquired the former CRF Meat plant in Colac in late 2013 to provide ongoing stability to this facility. It is an export accredited, fully integrated processing and chilling/freezing facility, operating all year round and processing 38,000 stock per week, or up to 1.7 million lamb and mutton each year. The facility processes fresh and frozen lamb and mutton products and packages for retailers and wholesalers.

- **Ararat Meat Exporters, Ararat**
Ararat Meat Exports are specialists in the export of quality mutton and lamb and also sheep skins. The business was established in 1993, and it operates the largest mutton abattoir in Victoria. Halal accredited, and under AQIS supervision, the abattoirs slaughters approximately one million sheep per year. All product processed is exported, with markets including Russia, Algeria, Saudi Arabia, Libya, Iraq, Kuwait, United Arab Emirates, Mexico, the Caribbean, South Africa, Malaysia, China, Taiwan, Korea, Singapore.
- **Hardwicks, Kyneton:** One of the largest private employers in Macedon Ranges Shire, Hardwicks is a significant processor of lamb and beef with domestic and export markets. Hardwick's service all sectors of the industry; from 260 butcher shops in Melbourne, country Victoria and interstate, to the major supermarkets, and is both Halal and Kosher accredited. The company's buyers purchase stock from saleyards and also direct from producers, either over the hook or for an agreed price.
- **Riverside Meats, Echuca:** This multi-species abattoir (beef, lamb and pork) processes about 5,000 head of lamb per week.
- **Westside Meats, Bacchus Marsh.**
- **Swan Hill Abattoir.**

Photo 4.1 **Semi-Intensive Sheep Containment Area, Warracknabeal**



4.4 OTHER INTENSIVE LIVESTOCK SECTORS

There have been cattle feedlots established in the Wimmera Southern Mallee over recent decades, of which the most significant has been the Charlton Feedlot, at one time owned by Coles Ltd, and currently by Elders. Other cattle feedlots were established in Hindmarsh Shire to produce beef for export markets; neither of these feedlots is currently operating. A new beef feedlot is the subject of an active planning permit application in Buloke Shire.

There is one dairy operation in the Wimmera, in the City of Horsham. Dairy farming is not really intensive livestock production, but has been included in the mapping project since the stocking rates are high, irrigation is required in the Wimmera Southern Mallee, and substantial supplementary feeding is involved.

4.5 OPPORTUNITIES AND OUTLOOK

There are only a couple of business managers in the Wimmera Southern Mallee who are conducting lot feeding of lambs as a business enterprise in its own right. The practice of finishing lambs by penning in lots, other forms of containment, or simply supplementary feeding, currently is overwhelmingly informal and opportunistic, in response to broader market, land management, and feed availability factors. The majority of sheep producers who are finishing sheep through supplementary feeding are more correctly described as “containment finishing” than lot feeding, since the infrastructure used is minimal, the finishing procedure is variable, the diets are only loosely designed, and the reasons for containment are often not just related to finishing (they can be also stock and land management related).

Those who run lamb lot feeding as a genuine business have a definite feed ration strategy (one example is “milled almond hulls, whole barley, canola meal, straw and high energy additives”) at an average cost of \$250 per tonne. There is a set weight gain objective (typically 200 grams per day, based on feed consumption of 1.3 kg per day) over a cycle of 8 weeks, with a serious lotfeeding business having 3-4 cycles per year. The feedlot contractor is paid a flat daily rate plus feed costs. Finishing in the 20-24 kilograms grid is the target. In the current environment, growers will consider lotfeeding if the farm-gate price for lamb is \$5 per kilogram or more. Below this level it is not considered a good investment.

There can be a case for lambs to be intensively housed from birth. The advantages of this approach are that it:

- Substantially reduces lamb loss (from disease, exposure to cold, predators and poor mothering).
- Enables lamb live weight growth targets to be systematically planned and achieved.
- Does not expose lambs to radical changes in diet (e.g. poor pasture to quality grains), which may have an adverse effect.

However, consumer preferences for free ranging, concerns over animal welfare, and Australia’s positioning as a clean and green agricultural producer, are leading to “less intensity”, even among long-established intensive animal production sectors. These factors all suggest that whole-of-life lot feeding for lambs is a very distant possibility.

Features of lamb feedlotting enterprises in the Wimmera Southern Mallee would be to give local producers the flexibility to be able to finish lambs in poor seasons or when an individual grower has limited pasture, is overstocked, wishes to conserve pasture, or has limited fodder crops. To implement serious lot feeding businesses, these opportunistic factors must be balanced with the need to provide consistent lamb products to meet market needs throughout the year (even if not always offering the most opportune pricing).

Photo 4.2 Sheltered Containment Area, Marnoo

Conclusions on the opportunities and outlook for lamb lot feeding are as follows.

- The sheep/lamb meat industry is currently in a peak period of the industry cycle, with strong demand and high prices.
- Unlike poultry and pig intensive livestock opportunities, which tend to differ in the east and western sections of the Wimmera Southern Mallee, lot-feeding of lambs offers a similar set of opportunities throughout the region. Some sheep producers consider that ‘corporate investment’ in livestock operations is more attractive in the west of the Wimmera, with corporate interests in the south and east more focused on cropping. However, this conclusion relates to broadacre, paddock production, operations rather than lot-feeding.
- Lot feeding of lambs, as it is currently practiced in Victoria, is relatively unstructured, informal and irregular compared with other intensive livestock sectors. At present, most growers in the region do not practice either lot feeding or containment to finish lambs, and those who do mostly implement simple containment strategies in smaller paddocks or yards. Only 2-3 businesses operate lot feeding as an enterprise in its own right, with an investment in carefully designed pens, laneways, feeder and watering systems.
- A 2008 “Lamb Feedlot Site Suitability Study”²³ concluded that “the potential for lamb lot feeding in the WMPP (Wimmera Mallee Pipeline Project) region as well as the West Wimmera and Hindmarsh Shires has been assessed by considering key operational requirements, hard selection criteria and soft selection criteria based on planning provisions. Based on these requirements, the WMPP area and West Wimmera and Hindmarsh Shires are ideally situated for a growing lamb feedlot industry within the bounds of the planning structure. Operational requirements such as grain supply, lamb supply, water supply (with the provision of GWM Water in the WMPP area) and other requirements are all ideal for lamb feedlot development.

²³ Feedlot Services Australia, 2008 for Department of Primary Industries.

Water supply in the West Wimmera and Hindmarsh Shires is limited to groundwater availability but may not be a limiting factor for lamb feedlot development". This conclusion is still appropriate in 2014, perhaps enhanced by the growth and financial returns in the current lamb market. The most likely mechanisms for achieving implementation are through collaborative structures; either groups of growers, supply chain partnerships, or joint ventures (possibly involving foreign investors and companies).

- Shift in export markets for Australian lamb favouring a larger focus on north and eastern Asia, and relative reduction in Middle Eastern markets will increase the relevance of lot feeding.
- Genetic improvement or, at least, breeding for selected traits will become a more important strategy in lamb production in the future, enabling Australian lamb to be differentiated. Wimmera Southern Mallee growers are well placed to have a leading role in this paddock to plate differentiation.
- Market signals for intensive livestock, in general, are favouring semi-intensive systems.²⁴ Therefore paddock produced lamb is likely to maintain its status as a superior product. While 'paddock produced' status should not be diminished by lot-finishing, there is no indication that lot fed lambs will ever attract a price premium as a result of their lot-fed or grain-fed in containment status.
- The main benefits in lot feeding for Wimmera Southern Mallee producers, in summary, are:
 - Finishing lambs to meet precise market requirements.
 - Ability to provide greater continuity of supply.
 - Assisting with land and stock management practices.
 - (Most significantly), adding another link in the lamb supply chain with the involvement of professional lot feeders who aggregate and finish stock (as their core business) and who have close relationships with processors, live-exporters, and retail and food service markets.
- The best opportunity for serious lamb lot feeding endeavours are in community based/collaborative lamb feed lots, and/or joint ventures with foreign investors, where growers contribute product (lambs from about 30 kilograms weight for finishing) and have equity or membership in a collaborative business, with both horizontal and vertical supply chain links.

²⁴ These market signals include perceived higher quality product from semi-intensive and open-range systems, perceived improved flavour, health attributes, biosecurity and animal welfare.

5. CHARACTERISTICS AND PERCEPTIONS OF WIMMERA SOUTHERN MALLEE INTENSIVE LIVESTOCK BUSINESSES

The suitability of the Wimmera Southern Mallee as an emerging region for production of intensive livestock is generally confirmed by the characteristics and perceptions of growers and other businesses in the supply chain, interviewed as part of the mapping project²⁵.

5.1 LINKAGES AND STAFFING

Table 5.1 shows that there are many strong linkages between intensive livestock producers in the Wimmera Southern Mallee, particularly in feed supplies, transport provision, managing waste and (to a lesser extent) use of local processors, and stock supply (including elite or improved genetics). However, there are many gaps in the regional availability of inbound suppliers, in particular, in the areas of:

- Health and veterinary services
- Intensive livestock farming advisory services (including advice on systems and equipment)
- Clean litter/bedding for sheds and shelters.

Table 5.1 Locations of Inbound and Outbound Supply Chain Partners²⁶

| | Local LGA | WSM | Victoria | Interstate |
|-----------------------|---------------|---------------|---------------|--------------|
| Inbound | | | | |
| Stock | 4.39% | 64.59% | 26.02% | 5.00% |
| Feed inputs | 11.53% | 75.92% | 8.16% | 4.39% |
| Health and Veterinary | 2.17% | 42.39% | 53.26% | 2.17% |
| Other Farm Advisory | 10.53% | 18.42% | 68.42% | 2.63% |
| Clean Litter/Bedding | 7.89% | 7.89% | 47.11% | 37.11% |
| Inbound Transport | 4.65% | 86.05% | 9.30% | 0.00% |
| Total Inbound | 6.86% | 49.21% | 35.38% | 8.55% |
| Outbound | | | | |
| Waste | 92.05% | 4.55% | 3.41% | 0.00% |
| Outbound Transport | 4.65% | 86.05% | 9.30% | 0.00% |
| Processing | 44.05% | 24.52% | 26.55% | 4.88% |
| Customers | 37.78% | 26.67% | 30.89% | 4.67% |
| Total Outbound | 44.63% | 35.45% | 17.54% | 2.39% |

A total of 731 employees were identified in 49 of the interviewed businesses (who provided staffing details). The employment levels are dominated by the two major processors in the region (Frew Group and Luv-a-Duck). Figure 5.1 shows the distribution of employment by very broad occupational classification and even at this broad level the categories are not mutually exclusive since, in the case of family run grower enterprises, the roles of farm management and operations tend to be combined. Figure 5.2 shows the distribution of employment by full-time, part-time and casual positions in these same 49 businesses.

²⁵ Up to 49 of the businesses interviewed provided responses on inbound and outbound linkages, up to 26 provided responses to questions about strengths and weaknesses, up to 17 commented on the roles of Wimmera Development Association, up to 18 rated the potential for value adding and efficiency opportunities,

²⁶ Percentages in this table relate to the number of participants – not the value of volume of their purchases or sales

Figure 5.1 Distribution of Employment in WSM Intensive Livestock Businesses by Occupation

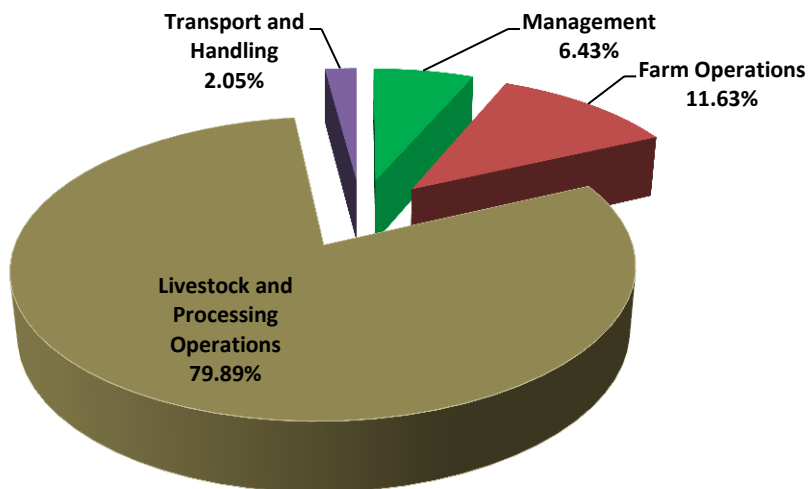
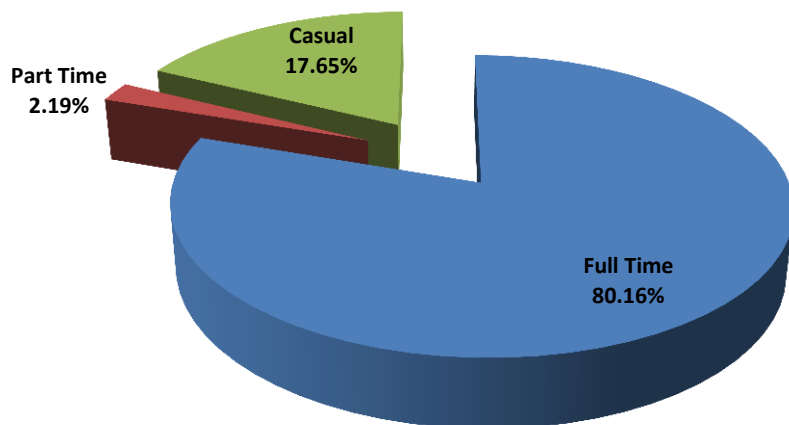


Figure 5.2 Distribution of Employment: Full-Time, Part-Time and Casual



5.2 LOCATIONAL STENGTHS, WEAKNESSES AND OPPORTUNITIES

Tables 5.2 and 5.3 and Figure 5.1 suggest that there is a widespread perception among existing businesses in the industry that Wimmera Southern Mallee has several strengths or major strengths for intensive livestock production and that, generally, it is at least as suitable as other regions for intensive livestock production (based on the number of interviewees indicating that many factors are neither a strength nor a weakness of the region). Locational factors most frequently rated as strengths or major strengths are:

- *Proximity to feed supplies*; rated as a strength/major strength by 83.4% of interviewees (including 71% from the pig sector, 80% from the poultry sectors, and all of the sheep and other sectors)
- *Biosecurity through correct design and buffers*; rated as a strength/major strength by 60.8% of interviewees (including 43% from the pig sector, 60% from the poultry sectors and 83% from the sheep and other sectors)
- *Current industry growth and viability*; rated as a strength/major strength by 70.8% of interviewees (including 91% from the poultry sectors, 86% from the sheep and other sectors, but only 17% from the pig sector)
- *Potential for industry growth and expansion within the Shire/City (in which the enterprise is located)*; rated as a strength/major strength by 66.7% of interviewees (including 29% from the pig sector, 82% from the poultry sectors and 83% from the sheep and other sectors)
- *Potential for industry growth and expansion elsewhere in the Wimmera Southern Mallee*; rated as a strength/major strength by 68.0% of interviewees (including 43% from the pig sector, and 67% from the sheep and other sectors, but only 40% from the poultry sectors)
- *Availability of local suppliers in equipment and maintenance*; rated as a strength/major strength by 57.2% of interviewees (including 80% from the pig sector, 82% from the poultry sectors and 71% from the sheep and other sectors). However, this factor was also nominated as a weakness by 14%, suggesting there are some specialised equipment supply gaps.

The results in the tables also reveal that none of the identified intensive livestock attributes were rated as weaknesses or major weaknesses by a majority. Of the weaknesses, the most frequently nominated for Wimmera Southern Mallee were:

- *Availability of suitably skilled labour in the region*, with 31.8% suggesting it is a weakness or major weakness (and this issue was common to all intensive livestock sectors)
- *Availability of local technical suppliers*, with 18% suggesting it is a weakness.
- *Proximity to processing facilities*; rated as a weakness by 16% (and highest in the pigs sector)

Overall, businesses in the sheep and other intensive livestock sectors identified the greatest number of Wimmera Southern Mallee region strengths (60.9%), followed by the poultry sectors (51.8%) and pigs sector (with 28.6%).

Table 5.2: Perceptions of Strengths and Weaknesses of the Wimmera Southern Mallee as a Region for Intensive Livestock Production

| | Major Strength | Strength | Neither Strength nor Weakness | Weakness | Major Weakness |
|--|----------------|----------|-------------------------------|----------|----------------|
| Proximity to processing facilities | 24.0% | 20.0% | 40.0% | 16.0% | 0.0% |
| Proximity to feed supplies | 29.2% | 54.2% | 16.7% | 0.0% | 0.0% |
| Availability of suitably skilled labour | 0.0% | 13.6% | 54.5% | 27.3% | 4.5% |
| Planning controls that protect industry investment | 4.2% | 25.0% | 66.7% | 4.2% | 0.0% |
| Planning controls that insulate intensive farming from urban development/ encroachment | 12.5% | 25.0% | 58.3% | 4.2% | 0.0% |
| Bio-security through correct design and buffers | 21.7% | 39.1% | 39.1% | 0.0% | 0.0% |
| Availability of local suppliers in equipment and maintenance | 4.8% | 52.4% | 28.6% | 14.3% | 0.0% |
| Availability of local technical suppliers (health/veterinary, nutrition, water) | 4.5% | 22.7% | 54.5% | 18.2% | 0.0% |
| Relationships with local government | 8.7% | 30.4% | 52.2% | 4.3% | 4.3% |
| Relationships with state government agencies (eg EPA, DPI, etc) | 4.3% | 30.4% | 56.5% | 8.7% | 0.0% |
| Industry growth and viability | 8.3% | 62.5% | 29.2% | 0.0% | 0.0% |
| Potential for industry growth and expansion, in this Shire/City | 12.5% | 54.2% | 29.2% | 4.2% | 0.0% |
| Potential for industry growth and expansion elsewhere Wimmera Southern Mallee | 8.0% | 60.0% | 28.0% | 4.0% | 0.0% |

Table 5.3 Overall Strengths and Weaknesses Identified by Type of Intensive Livestock Sector

| | Major Strength | Strength | Neither Strength nor Weakness | Weakness | Major Weakness |
|-----------------|----------------|----------|-------------------------------|----------|----------------|
| Pigs | 3.3% | 25.3% | 50.5% | 17.6% | 3.3% |
| Poultry | 7.0% | 44.8% | 37.8% | 8.4% | 2.1% |
| Sheep and Other | 26.4% | 34.5% | 27.6% | 11.5% | 0.0% |

Many of the businesses in intensive livestock production supply chains do not have an appreciation of the work of Wimmera Development Association, however Table 5.4 summarises their perceptions of the relative roles/potential roles of WDA, as they relate to intensive livestock sectors. The table suggests that most respondents would welcome an involvement by WDA in information dissemination, advocacy, promotions and opportunity facilitation.

Figure 5.1 Strengths and Major Strengths Identified by Intensive Livestock Sector

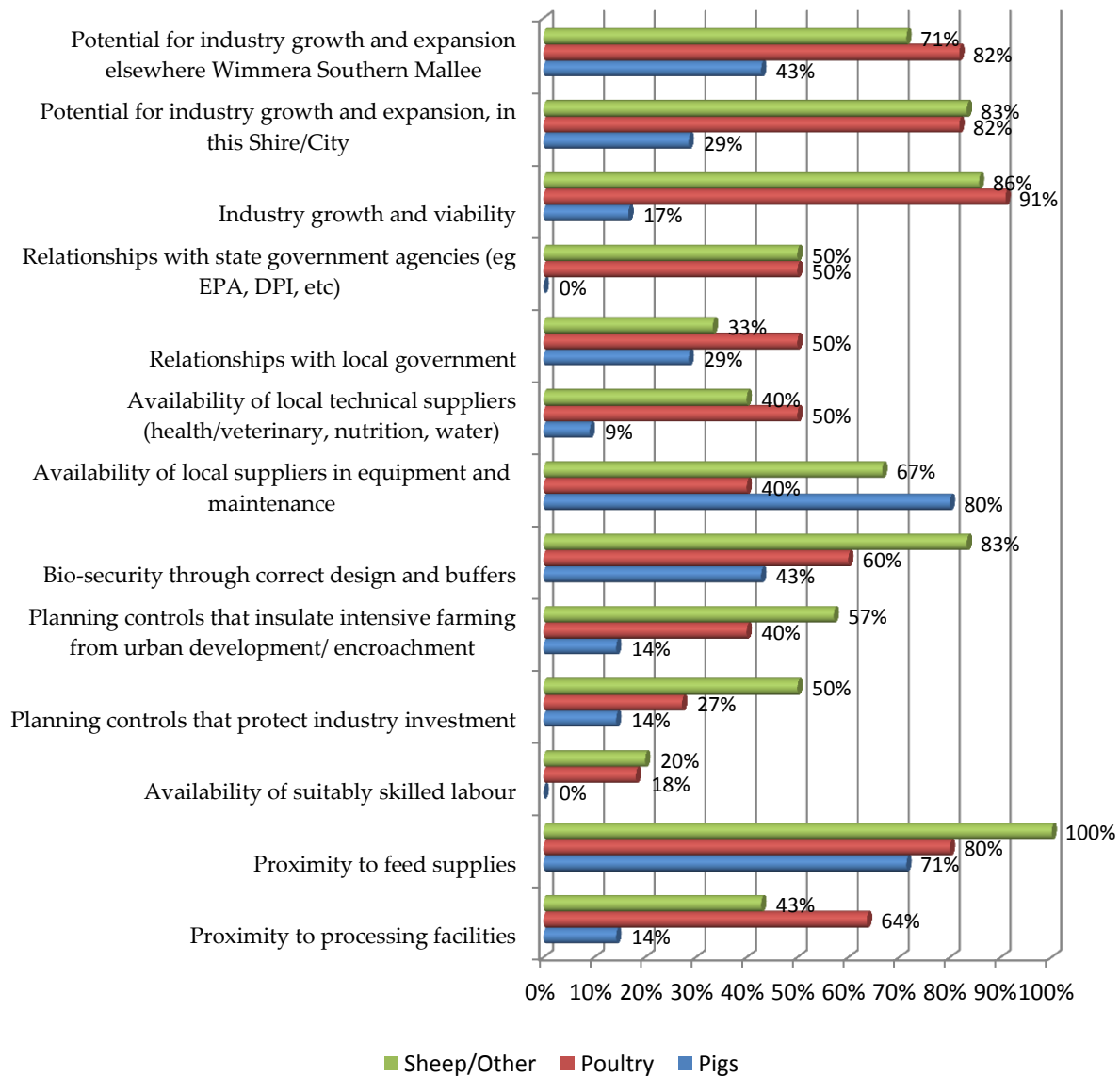


Table 5.4 Perceived Roles of WDA in Intensive Livestock Industry Support

| Activity | Not at all | Unlikely | Minor Role | Important | Critical Role |
|--|------------|----------|------------|-----------|---------------|
| Advocacy (and lobbying) with government and potential investors | 0.0% | 5.9% | 35.3% | 52.9% | 5.9% |
| Disseminating information on the region | 0.0% | 0.0% | 35.3% | 52.9% | 11.8% |
| General promotions of intensive livestock in Wimmera Southern Mallee through prospectuses and investment opportunities | 0.0% | 17.6% | 47.1% | 35.3% | 0.0% |
| Specific promotion/marketing industrial and production sites or precincts | 0.0% | 23.5% | 35.3% | 29.4% | 11.8% |
| Organising trade events and seminars in the industries | 0.0% | 12.5% | 18.8% | 62.5% | 6.3% |
| Facilitating commercial opportunities for local producers or businesses to jointly undertake (eg in handling waste, developing co-products, exporting) | 5.9% | 23.5% | 35.3% | 23.5% | 11.8% |

Perceptions of the potential opportunities to add value, and/or achieve production efficiencies, are summarised in Table 5.5 and Figure 5.2, revealing the ‘top 3’ Wimmera Southern Mallee region measures (each with more than 50% of interviewees rating them as good or excellent opportunities)

- Security, volume and quality of water from the Wimmera Mallee pipeline (rated highly across all intensive livestock sectors)
- Introducing new genetic lines or breeding differentiation (especially for sheep and pigs)
- New innovations in sheds or yards (such as materials usage, heating/cooling systems, yard layouts and configurations).

Table 5.5 Opportunities to Add Value to Intensive Livestock Production in the Region

| Potential Opportunity Area | Not at all | Unlikely | Minor Opportunity | Good Opportunity | Excellent Opportunity |
|--|------------|----------|-------------------|------------------|-----------------------|
| Changing production system (eg to free range, biodynamic, organic) | 11.8% | 11.8% | 47.1% | 17.6% | 11.8% |
| Introduce breeding or new genetic lines | 0.0% | 12.5% | 18.8% | 62.5% | 6.3% |
| Additional feed mill operations to serve the local industry | 11.1% | 11.1% | 38.9% | 22.2% | 16.7% |
| Renewable energy (eg solar, biomass, thermal) | 0.0% | 5.9% | 47.1% | 47.1% | 0.0% |
| Other energy (eg gas, LNG) | 5.9% | 5.9% | 41.2% | 29.4% | 17.6% |
| Water from pipeline | 0.0% | 0.0% | 12.5% | 25.0% | 62.5% |
| Water from rainfall catchment and filtration/treatment) | 0.0% | 12.5% | 81.3% | 6.3% | 0.0% |
| Greater automation in sheds or yards | 0.0% | 47.1% | 17.6% | 29.4% | 5.9% |
| Other innovation in sheds or yards (eg material usage, heating/cooling or other design features) | 6.3% | 31.3% | 6.3% | 37.5% | 18.8% |
| Contract processing (instead of selling to processor) | 25.0% | 37.5% | 18.8% | 18.8% | 0.0% |
| Collaborating with other growers to market, process or value-add to product) | 7.1% | 35.7% | 14.3% | 28.6% | 14.3% |
| Selling to a new/different processor | 33.3% | 26.7% | 20.0% | 13.3% | 6.7% |
| Selling to new customers | 12.5% | 31.3% | 18.8% | 25.0% | 12.5% |

Figure 5.2 Good or Excellent Opportunities to Add Value to Intensive Livestock Production in the Region

