



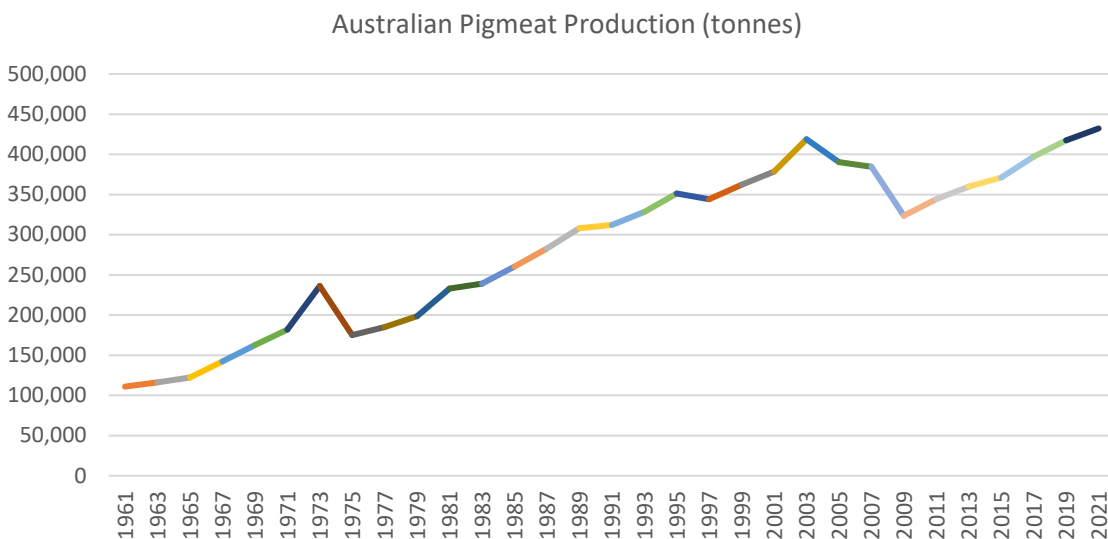
Investment Guide

Pig Production

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Overview of Pig Production

Australia’s pig production sector is re-emerging after considerable restructuring of the industry over the past 20 years. While the number of pig farmers in Australia has declined steadily for the past 60 years, from nearly 50,000 in 1960 to just 1,218 in 2021¹, the number of breeding sows has been relatively stable, indicating that piggery size has steadily increased and is now at an average of about 270 breeding sows and over 2,000 pigs. The 1980s and early 1990s were periods of consolidation for the pig meat industry. It was also the period that marked the end of the era of no frozen pork product importation. 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 (particularly in the form of bacon, ham and other smallgoods) has risen dramatically.

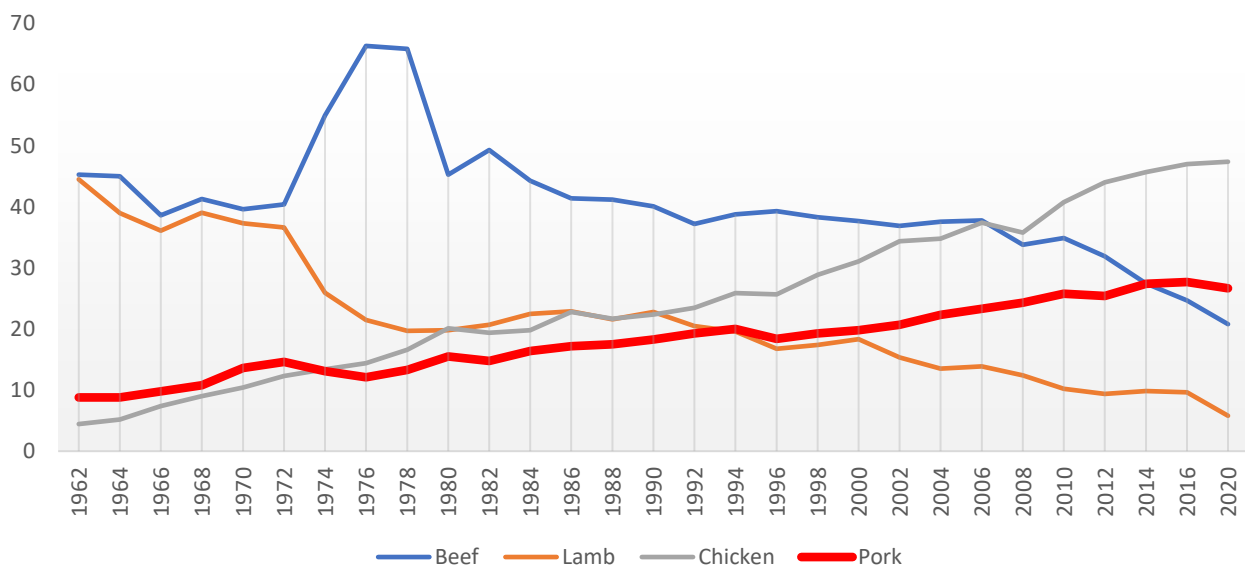


Australian domestic pork consumption has steadily increased over more than 50 years: A result of improved marketing, perceived health benefits of pork as a lean white meat, more diverse cooking applications, and an increasing proportion of the population of Asian origin. Pork consumption has overtaken beef and lamb in Australia in the twenty first century.

¹ ABS Agricultural Census 2020-21. However, Australian Pork Ltd reported (industry facts on the APL website) that there are 4,300 ‘registered pork production sites’ in 2022.



Meat Consumption in Australia (kg/capita)



Swine fever outbreaks and impacts on worldwide pig herds, and an increased focus on biosecurity has changed the immediate prospects for investment in Australia's pig industry. It has raised the longer-term outlook for increasing production of baconers (pigs for ham, bacon and other smallgoods) for the domestic market and to not just specialise on porkers (pigs for fresh pork markets). The recent second wave of swine fever in China has reportedly reduced the pig herd by 20-30% in a country where pork is the major animal protein consumed. Although this is not necessarily an opportunity for export of Australian pork (for which only 10% of product is currently exported to all markets), it is an indicator that world supply is likely to be below demand for several years (longer if there are further disease outbreaks), at a time when Australian domestic demand is stable.

While biosecurity legislation prohibits firms from importing fresh pig meat, firms may import processed pig meat, such as bacon. Industry body Australian Pork Ltd (APL) reports pig meat import volumes have grown over recent years. The rising prevalence of imports has had a negative effect on demand from downstream sectors. Cured meats and smallgoods manufacturers are increasingly sourcing low-cost imported pork for production to decrease their input costs. This trend reduces the demand for locally produced pork meat used in meat processing. Imported processed pork also competes with locally manufactured products by decreasing sales of local cured meat and smallgoods. Processed pig import permits have been issued to limited countries including Canada, the United States of America, New Zealand and Denmark. These producers generally have lower production costs and benefit from large economies of scale. Australia's Pig Farming industry has difficulty competing with these larger competitors (partly due to subsidies offered by their governments which reduce production costs).

In 2021, there were 1,218 farm businesses in Australia producing pigs, with a total herd of 2.58 million and around 270,000 breeding sows. Of these, 253 farm businesses were in Victoria and 497,000 pigs were under production (or 19.3% of the national total).

Victoria is under-represented in pig production with 19.2% of the national pig herd and 25.8% of the national resident population: Buloke Shire is well placed to assist in increasing Victoria's share of this industry.



Why Buloke Shire?

Buloke Shire has been a base for pig farming for many years. While the number of growers involved in breeding and raising pigs at the start of the twenty-first century (in 2001) has reduced from 90 to 14 in 2021, the average scale of operations has become larger and both herd size and average numbers of breeding sows has increased. In 2021, Buloke Shire's 14 pig farming enterprises:

- Carried 32,000 pigs at an average of 2,264 (15.3% higher than the Victorian average of 1,964)
- Housed 1,380 breeding sows at an average of 97 per farm. This is considerably less than the Victorian average of 195 breeding sows and suggests that several of the Buloke pig enterprises are exclusively involved in weaner, growout and finishing operations.
- Had a gross farmgate value of pigmeat and other pig disposals of \$21.645 million, about 6.5% of the Victorian total.

Further, Buloke is at the centre of a region which produces the majority of Victoria's pig products. Buloke Shire and the adjoining Shires of Loddon, Campaspe, Gannawarra, Northern Grampians, and Yarriambiack produce 62% of Victoria's pig products both by volume (307,600 head) and gross farmgate value (\$207.5 million).

Buloke's communities are generally supportive of pig farming, understanding that it complements grain growing and helps to drive the economy, adds to local diversity, and provide new local jobs. Land prices for pig farming operations could be expected to be around \$20,000 to \$25,000 per hectare (or \$8,000 - \$10,000 per acre) with very few sales of properties less than 80 hectares.

Buloke's climate, grain growing farming base, and the ability to provide sufficient distances between piggeries, waste disposal areas and dwellings make it an excellent location for pig production.

Abattoirs which service producers Buloke and the surrounding region are located in Melbourne, Murray Bridge, Corowa and Port Wakefield. A micro-abattoir for small paddock-to-plate pig producers has also been established in Barham. Value-adding and smallgoods facilities are more numerous, and include KR Castlemaine/Don KR, Istra Smallgoods in Musk near Daylesford, Bertocchi and Casalingo in Melbourne, and Barwon Valley in Geelong.

Becoming a Pig Producer

Until the 2000s, few growers had a contract arrangement with a pork processor. Most were independent growers with an established breeding herd (although in practice most of these supplied pigs to a single processor on a regular basis), and their pig production enterprises were usually a complementary activity to other farming enterprises. Industry restructuring (through acquisitions, mergers and rationalisation), the introduction of a phase-out period for sows in stalls, and import competition have all contributed to reductions in both the number of growers and the proportion of independent growers.

The pig industry has become dominated by major processing companies. These organisations represent only 2% of all farming enterprises (most with multiple sites) in the industry, but account for 60% of industry production. 'Corporate pig farms' tend to have more than 500 sows. Large vertically integrated firms, such as Food Investments Pty Ltd (owner of KR Castlemaine and George Weston Foods) and Industry Park Pty Ltd (the Australian subsidiary of multinational meat company JBS), also operate in ham, bacon and smallgoods manufacturing. About 35% of farms are contract growers and the remaining 60% of producers are small producers (generally less than 100 sows) who produce pigs in addition to other primary production, often grain growing.



Disease and biosecurity concerns have recently stimulated interest in more secure local supply chains. The United Nations Food and Agriculture Organisation (FAO) estimated the peak in the global pig herd at 992 million head in 2015. In 2018 the outbreak of African swine fever in China saw the Chinese herd decline by an estimated 30% from pre-ASF levels, falling from 441 million head in 2017 to 310 million head in 2019. The impact of African swine fever in China has seen the global pig herd decline to its lowest level seen since 1997 with the FAO reporting a global herd of 850 million head in 2019². The Nipah virus has arisen in 2022 as another potentially serious threat to worldwide pig production. It is harboured in fruit bats and spread to pigs (with mortality rates of around 40%) and humans (with mortality rates as high as 40%-75%) and it is currently active in Australia's neighbouring countries of Papua New Guinea and Timor Leste.

Disease and biosecurity concerns have recently stimulated interest in more secure local supply chains. This should increase the level of investment in domestic pig production, both for baconers and porkers.

Buildings and Growing Environment

An intensive piggery investment requires sufficient capital for construction of buildings, equipment installation, stock, feed, labour and operating expenses until first sales are made (at least five months, and up to 11 months, depending on the purchase and sale age).

The type of housing is related to the production system and this influences the required capital investment. Shedding options generally include traditional tin shedding and, the less costly, polythene covered 'eco-shelters'.

Pigs can be kept in paddocks/outdoor environments, but still require protective shelter and such a system tends to have a higher labour requirement with different skills, and production may be less efficient (with more feed required per unit of meat produced). Outdoor production is better suited to areas with reasonably well drained soil (although not free draining into the water table, or heavy clay), preferably with rain spread throughout the year. Separate housing or areas are generally provided for pigs of different ages because of their different feed and climatic requirements and to assist in maintaining herd health levels. Housing designs are available from companies specialising in piggery construction. In recent years, outdoor environments for breeding have become popular, with growouts in eco-shelters or other indoor fixtures.

Long, narrow buildings are cooler in summer and warmer in winter if the long axis runs from east to west. Pig sheds should be situated to take advantage of prevailing winds for coolness in summer. Conversely, ventilation openings should be protected from prevailing winds in winter. This can be achieved by planting selected trees in a shelter belt that does not interfere with airflow required for cooling in summer. Shelter belts have the added benefit of enhancing the appearance of the piggery; softening its visual impact. They can also affect the physical environment by effectively increasing the surrounding temperature in winter and reducing it in summer.

² Thomas Elder Markets, State of the Industry Report 2021



Day to Day Management

Pigs need a dry bed, and protection from extreme temperature and sunburn. There are minimum requirements for shedding space (and open ranging, if relevant), fresh air, hygiene, access to feed and water, and accommodation.

Importation of genetically elite pig breeds is not permitted in Australia. Local genetic selection of commercial breeds usually involve Large White, Duroc, and Landrace breeds. Large White pigs tend to produce large litters, making them ideal for breeding and herd building. Duroc pigs have solid-colour hides, while Landrace pigs have long bodies and also produce large litters. Niche and emerging producers have begun to use traditional breeds as a point of difference, such as Berkshire, Hampshire, Wessex Saddleback and Tamworth.



Large White



Landrace



Wessex Saddleback



Tamworth



Porkers are typically low in fat, producing high protein that conforms to consumer expectations for lean meat. Peak body Australian Pork Limited has heavily promoted fresh pork to consumers, which has bolstered demand and farmers have been focusing on producing leaner pigs to satisfy consumer health concerns. Porkers have grown as a share of both production and revenue over the past decade, in line with rising demand for leaner meat. Baconers are pigs typically raised to over 60 kilograms (dressed weight), although the maximum weight can sometimes be much higher. The larger size means they are better suited to processing into long cuts of meat, such as full rasher bacon and hams.

The pig production system timetable is approximately:

- | | |
|---|--------------|
| - Breeding (natural and/or artificial insemination) | 1 week |
| - Gestation | 16 weeks |
| - Farrowing | 2-5 weeks |
| - Weaning | 2-10 weeks |
| - Growout/finishing | 10-25 weeks. |

Labour is an important resource for seven day per week piggery businesses:

- For breeding and growing operations, the requirement tends to be one person for 100-200 sows and their piglets. This depends on the amount of automation at the site (e.g. feeding systems, whether ready-mixed feed is used and if pig delivery and other tasks are done by others). One person with part-time help is the most common system on piggeries with up to 150 sows.
- For 'pig growing only' farms, one person full time, with casual or family help, can generally manage about 4,000 grower pigs with automated feeding.
- In rotational outdoor piggeries, the pigs are kept in paddocks, sometimes with open deep litter shelters or basic huts. The paddocks are rotated with a crop-forage-pasture phase. These piggeries operate under site specific conditions and have different environmental risks than conventional and deep litter systems. They tend to have smaller herds and can also be managed by a single operator, family unit, and/or with part-time help.

Casual labour is often used in both breed-to-finish and grow-out units of any size when other farm enterprises require attention, for weekends or holidays and for specific tasks such as loading and sorting pigs and cleaning. Labour costs may be 20-30% higher in deep litter housing systems because bedding needs to be added and spent litter needs to be removed.

Since the 1990s, new commercial scale pig farming enterprises have been adopting multi-site production, all-in/ all-out management with split-sex and phase feeding systems. The use of deep litter housing to adopt these systems and in expansion programs has allowed the capital cost of construction to be approximately halved. Shed costs vary considerably but weaner sheds are in the order of \$70 to \$100 per pig place, grower–finisher sheds at \$130 to \$150 per pig place and dry sows up to \$350 per sow place.



For a breeding herd, 'pigs weaned per sow per year' is the main performance indicator, and for a growing herd the kilograms of meat sold is fundamental. Critical management success factors for a piggery include:

- Containing costs
- Meeting mating targets, with good genetics
- Keeping sheds occupied
- Selling stock at optimum weights
- Efficient use of feed, with no wastage
- Optimise animal health.



For an intending operator, some managerial skills and a previous history with livestock, are an advantage. Accredited training courses, online material and printed literature on pig keeping are readily available.

Markets and Supply Chains

As Australian pig producers have increasingly moved into porker production there has been reduced domestic demand for baconers, with domestic sales of smallgoods being taken up by imported product. The industry has benefited from rising pig meat consumption and, although consumption of processed pork products is greater than that of fresh pork, fresh pork consumption is rising at a faster rate. Concerns over disease in foreign countries (African swine fever, Nipah, etc) and the real impact these could have on world pig stocks may incentivise Australian producers to re-invest in baconer production. The opportunity to brand and differentiate Australian made smallgoods is also likely to encourage greater domestic baconer production.

Vertically integrated companies in meat processing and marketing and/or meat and smallgoods processing operations, like Food Investments Pty Ltd (owner of Don KR and George Weston Foods) and Industry Park Pty Ltd (the Australian subsidiary of multinational meat company JBS), are responsible for growing and processing the majority of Australian pig production.

Medium meat processors and butchers account for the second-largest market. The number of growers in this market has declined and growth has been slower than the big, integrated 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 their pork purchasing, especially if they have an added marketing feature (such as regional branding, free-range or other perceived quality attributes). As well, butchers are likely to innovate with value added pork products and speciality lines to create a point of difference from supermarkets.

The largest businesses in the pig farming industry are those with more than \$10 million in annual income. They account for 59.9% of industry revenue, and there are 13 enterprises in this category (compared with 772 small-to-medium enterprises). It is these large businesses which tend to be the main options for a new grower who intends to grow under contract. The biggest corporate operators in the industry³ are Sunpork Pty Ltd (with a range of brands such as Sunpork Fresh Foods, Three Aussie Farmers and Seven Mile Premium Pork), Food Investments Pty Ltd (with brand names KR Castlemaine and George Weston Foods), Craig Mostyn and Co Pty Ltd (brand name Linley Valley Pork), and Westpork Pty Ltd. Otway Pork is another significant operator, with 7 farming operations west of Buloke Shire (in West Wimmera Shire).

In the downstream smallgoods supply chain, major smallgoods brands Primo Smallgoods and Hans Continental Smallgoods are both now owned by Industry Park Pty Ltd (the parent company of JBS Australia Pty Ltd). In turn, JBS Australia is a wholly owned subsidiary of Brazilian-based JBS, the world's largest meat producer. JBS is now also directly involved in pig production in Australia after acquiring Rivalea Holdings Pty Ltd, early in 2022, from Singapore company QAF Holdings. This acquisition brought with it an 80% equity holding in Diamond Valley Pork in Melbourne; an abattoir and value-adding business which had been one of the key supply chain processing options for small-to-medium pig producers.

Bertocchi Smallgoods Pty Ltd is another large value-adding processor with brands Bertocchi Brothers, Foremost, Happy Pig Co, San Marino Smallgoods, and Wurstel. D'Orsogna Ltd and Tibaldi are also significant pigmeat smallgoods producers in Australia.

³ IBISWorld Pig Farming in Australia Industry Report (February 2022)



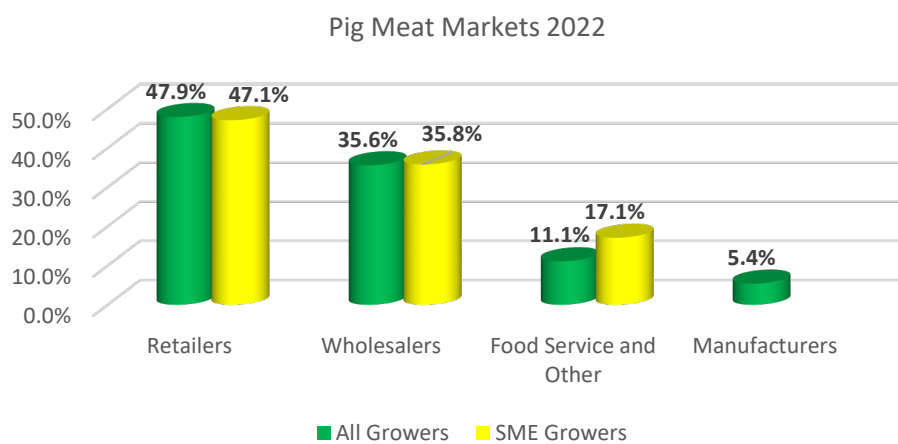
Current Markets for Australian pigmeat products are:

- \$718.5 million in farmgate gross value (or 47.9%) is sold to retailers, predominantly full-service supermarkets.
- \$534 million in farmgate gross value (or 35.6%) is sold to wholesalers.
- \$166.5 million in farmgate gross value (or 11.1%) to food service outlets (ie restaurants, cafés, caterers).
- \$81 million in farmgate gross value (or 5.4%) to food manufacturers.

Sales to retail and wholesale customers are similar for large piggery businesses and small-to-medium producers. Large producers dominate sales to manufacturers/value-adders, while small-to-medium operators tend to have successful relationships with food service outlets. For the 40.1% of sales made by small-to-medium pig producers (ie those with less than \$10 million per year in annual sales):

- \$283.1 million or 47.1% of sales are made to wholesalers
- \$215.2 million or 35.8% of sales are made to retailers
- \$102.8 million or 17.1% of sales are made to food service outlets.

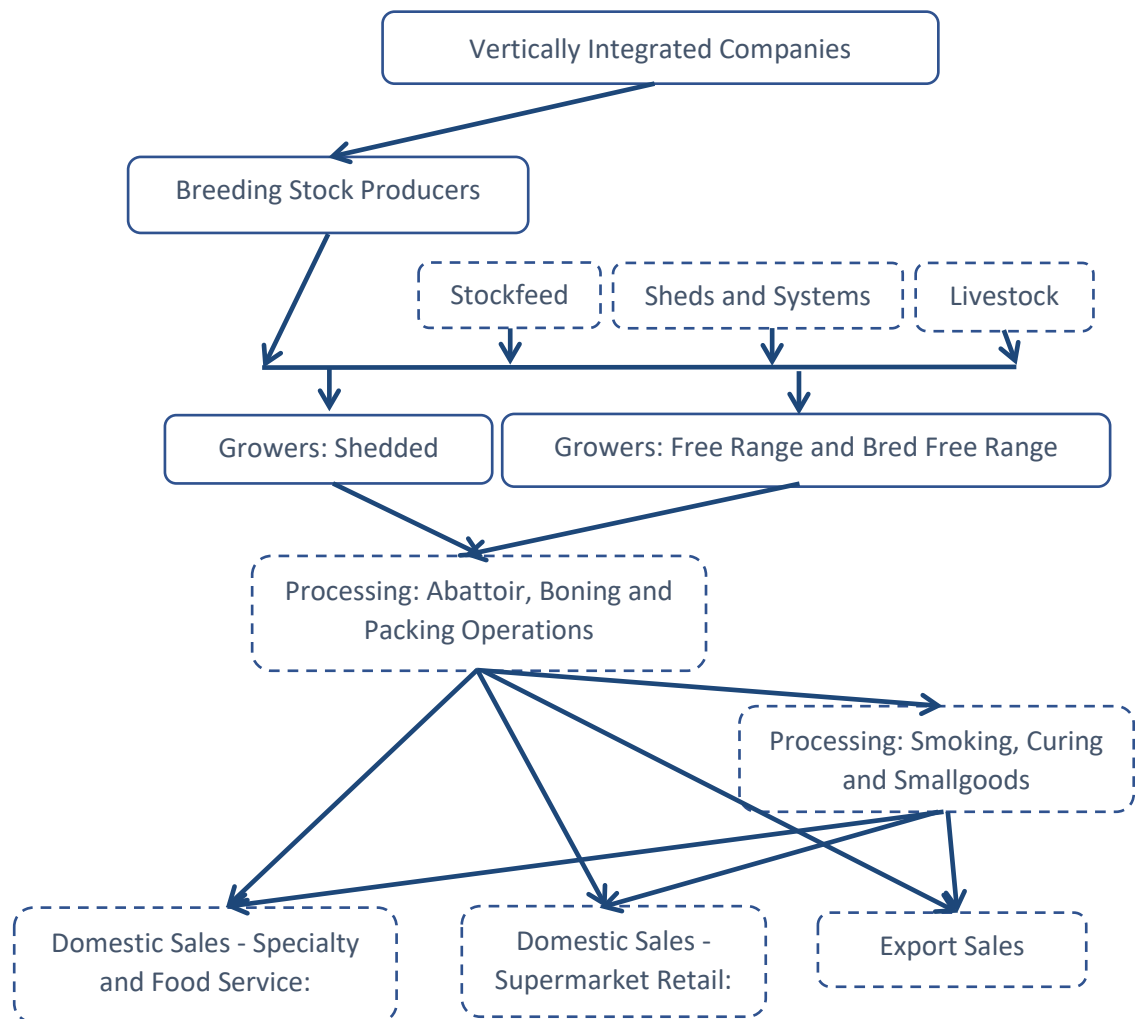
The pigmeat smallgoods of ham and bacon have a domestic sales value of \$1.784 billion in 2022; \$988 million for ham and \$796 million for bacon.



Opportunities for sales to meat processors on 'spot markets' 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. 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.



Buloke Shire Pig Industry Supply Chains



Site and Infrastructure Requirements

The following notes relate to suggested 'ideal' land and infrastructure for a pig farming operation. Farmers and investors may be able to work around deficiencies in many of the preferred natural or installed assets, through design, innovation or making trade-offs.

Piggeries do not need to be sited on highly fertile land, but are often operated in, or near, grain growing areas which are accessible to processors. Non-compatibility with urban development has tended to reduce the tradition of having piggeries located near markets in metropolitan-rural fringe areas (which was common until the late twentieth century). The piggery site needs to be accessible by road and have access to electricity and water. The site should be flat or preferably gently sloping for improved drainage. Separation from existing piggeries and roads on which pigs are transported reduces the risk of new diseases being introduced. Piggeries need to be sited at a minimum separation distance to avoid interfering with life both onsite and offsite. The available land area needs to be large enough for the piggery buildings and for effluent and waste disposal (e.g. onto land used for crops), and to accommodate future feed mixing facilities and piggery expansion, although piggery waste may be taken to other sites.

A flat site is best, away from waterways, lakes and flood prone areas. Valleys and areas enclosed by thicker vegetation can be suitable, depending on the microclimate and odour dispersal characteristics. Free range sites need available grazing land to accommodate free-ranging densities.



Piggeries need to be sited at a minimum separation distance to avoid interfering with life both on-site and off-site. The available land area needs to be large enough for the piggery buildings and for effluent and waste disposal (such as spreading on land used for crops or conversion to bio-energy)⁴, and to accommodate future feed-mixing facilities and piggery expansion, although piggery waste may be taken to other sites.

The size of the unit will generally be in multiples of what one person or family can manage as well as whether there are other tasks on or off farm. Unit size may also be influenced by environmental requirements (such as area for spreading effluent, distances to houses), shed space available on the property, and by the load size of trucks.

The proposed piggery may need to employ part- or full-time labour, or be managed differently (e.g. on a large batch system with events such as farrowing happening every five weeks instead of continuously or weekly). If either the piggery or existing farm enterprises operate less efficiently, overall income may suffer. Modest capital investment in the other farm (or off-farm) enterprises may lift total income more economically than a larger sum required to establish a piggery. Personal skills and knowledge must also be considered. A small piggery is vulnerable at times of low returns, but the total farm income may be balanced by other enterprises. Economies of scale improve with increasing unit size, but there may be a limit to economies of scale; production efficiency (such as pigs produced per sow a year) is not necessarily better on larger units.

Sites, which are initially identified as suitable, may have planning restrictions due to zoning provisions or overlays (related to the environment or heritage). These provisions can be checked in advance with help from Council staff or will be advised during the planning permit process.

Buffer distance guidelines include:

- Piggery operations (from the perimeter) to be at least 800 metres from a major water supply and 25-100 metres from a watercourse (depending on the method of effluent and by-product discharge)
- Separation distances for community amenity are determined by a formula which calculates the distance as a function of the number of pig units multiplied by design, siting and terrain factors

The Victorian code of practice suggests a separation distance of no less than 200 metres from a public road, no less than 100 metres from residence (on the property), and no less than 3,000 metres from a neighbouring piggery.

Sealed bitumen road access is preferred. If the nearest sealed road is not VicRoads controlled, the development costs for access to the site may be reduced. However, Council roads may also require some access expenditure from the farmer. *Buloke roads have no restrictions on B-doubles.*

Access to Wimmera Mallee pipeline water needs to be calculated to allow for pigs to drink and for wash down purposes. An allowance of 75 litres per day per sow with litter (55 litres for drinking and 20 litres for wash down) should be the minimum provision (with a potential actual use range of 55-320 litres). Weather conditions, type of housing and effluent management can make the difference within this range. Research by Australian Pork has determined the average daily consumption for each class of pig as:

- Weaners 3 litres/day
- Growers 5 litres/day
- Finishers 6 litres/day
- Dry sows 11 litres/day
- Lactating sows 17 litres.

⁴ These waste disposal activities might be transferred to another site off-farm



A poor water supply can lead to slower growth rate, more urinary infections, and lower feed intake among lactating sows (impacting on body condition).

Access to single phase power is adequate, although three phase power is ideal for large operations with electronic systems. Power availability must be checked with Powercor by the farmer to ensure there is sufficient capacity at each installation.





Finance

Larger farm allotments make it easier to obtain smooth permit approvals, through meeting the industry requirements and lessening any potential for objections. For a start-up operation, a property of at least 80 hectares is desirable, and suitable land in Buloke could be available for around \$20,000-\$25,000 per hectare.

The building cost for an intensive piggery (contract-built using new materials) is estimated at \$8,000 per sow place for a unit that breeds and grows the pigs to baconer weight (excluding land and livestock), depending on the style of housing.

The average Australian pig farming business (establishment) has an estimated income of \$4,921,300 in 2021-22. The average business expends an estimated:

- 53.2% of annual income on input purchases (feed, health services, etc)
- 11.2% of annual income on wages
- 5.7% of annual income written-down to depreciation
- 3.0% of annual income on utilities (power, water, waste)
- 23.0% of annual income on all other costs (insurance, repairs and maintenance, marketing expenses, levies, etc),

and achieves 3.9% an annual net profit (before tax)⁵.

The average small-to-medium pig farming business (ie all those pig farming enterprises with sales less than \$10 million per annum), which constitute 79% of all growers, has an estimated income of \$2,483,500 in 2021-22. The average small-to-medium business an estimated:

- 30.3% of annual costs on input purchases (feed, health services, etc)
- 17.4% of annual income on wages
- 9.6% of annual income written-down to depreciation
- 4.1% of annual income on utilities (power, water, and waste)
- 25.8% of annual income on all other costs (depreciation, insurance, repairs and maintenance, marketing expenses, levies, etc),

and achieves 12.8% an annual net profit (before tax)⁶.

Planning Checklist

Early steps in planning involve identification of any land use or zoning issues from Council, other agencies responsible for piggery licensing and approval, water licensing, soil conservation and vegetation clearing. Consultation with the relevant agencies, ideally through a pre-lodgement, on-site meeting, helps to determine if the site is suitable, and the major issues to be addressed in an application. These issues are listed below in a checklist.

Submission of application forms and supporting information, advertising the development and formal assessment, will follow.

⁵ IBISWorld Pig Farming Industry Report 2022

⁶ IBISWorld Small to Medium Enterprise Pig Farming Industry Report 2022



Applicant details
Site description (including plans) and assessment
Real property description
- land tenure
- land area
- cadastral plan
Land zoning, and zoning of the surrounding land
Climatic data
- median annual rainfall
- average monthly rainfall
- rainfall intensity data (1-in-20-year design storm, 1-in-20-year 24-hour storm)
- average monthly evaporation
- monthly maximum and minimum temperatures
- Wind speed and direction
Soil description for the piggery complex site (including analysis of basic physical properties) and reuse areas (including analysis of basic chemical and physical properties)
Description of groundwater resources and geology of the site
- details of any bores on the subject property
- analysis of the chemical properties of groundwater for use in piggery
- details of any licenses held
Description of surface water resources on the property or in the vicinity of property
- Analysis of the chemical properties of surface waters for use in piggery.
- Details of any licenses held
Description of the current vegetation of the site and the extent of any proposed clearing
Identification of any items, sites or places that may have cultural heritage significance
Description of the proposed piggery operation
Total pig or standard pig unit (sPu) numbers
- herd composition
- numbers and weights of incoming and outgoing stock
- sources of stock
Description of housing and layout plans
Water requirements for drinking, cooling, cleaning and shandying with effluent, and water sources and quality
Bedding requirements and bedding sources
Feed requirements, sources and storage areas
Staff numbers
Hygiene practices
Prediction of manure production and mass balance estimate of the nutrient content of solid and liquid by-products
Design of effluent collection, pre-treatment and treatment system, including plans



Sizing and proposed management of the reuse areas, including location, area, method, frequency and general management of spreading/irrigation activities
Description of carcass management or disposal, including plan for mass mortalities
Calculation of traffic numbers and consideration of access and road safety. There is also a need to negotiate with state or territory and local governments regarding road upgrading and maintenance responsibilities
Environmental impact assessment
Community amenity impacts - particularly odour, dust, noise, traffic calculate separation distances to sensitive receptors
Surface water impacts – quality and availability for other potential users
Groundwater impacts – quality and availability for other potential users
Vegetation impacts – effects of clearing on rare and threatened species and communities
Impacts on items, sites or places of cultural heritage significance
Impacts to soils of reuse areas
Summary of design and management features to minimise adverse environmental impacts
Proposed environmental monitoring and reporting
Environmental Management Plan (EMP) - an EMP focuses on the general management of the whole farm, taking into account the environment and associated risks. It should document design features and management practices; identify risks and mitigation strategies; include ongoing monitoring to ensure impacts are minimised; and processes for continual review and improvement
Plans including:
<i>Topographic plan</i> - showing watercourses and drainage lines; flood lines, protected land; and location of nearby residences
<i>Recent aerial photograph</i>
<i>Farm plan</i> – showing current land uses; proposed piggery complex location; proposed carcass composting or burial site; proposed reuse areas; on-farm roads; location of on-farm bores; and location of any soil conservation or drainage
<i>Piggery complex layout plan</i> - including location of by-products treatment and storage facilities
<i>Effluent treatment ponds plan</i> - (if applicable)
<i>Separation and buffer distances plan</i> - showing location of piggery complex (including feed storage; and by-products storage and treatment facilities) and reuse areas; and distances to sensitive land uses e.g. houses and towns, as well as buffers around sensitive natural resources

Planning checklist derived from the National Environmental Guidelines for Piggeries, Australian Pork Ltd.