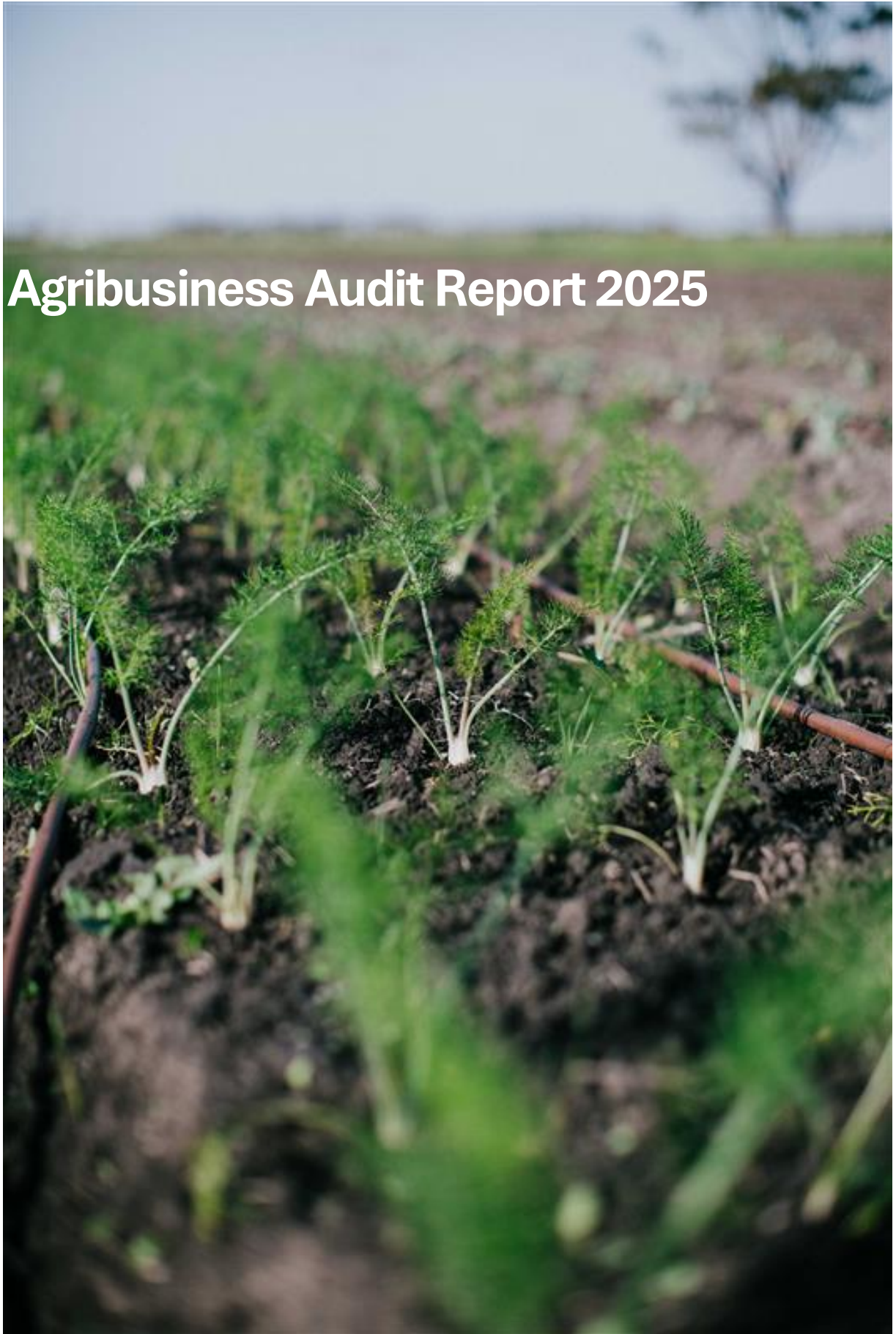




Agribusiness Audit Report 2025

Prepared by:

Cardinia Shire Council

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Published Select date, it will appear as 'month, year'

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ACKNOWLEDGMENT OF COUNTRY

Cardinia Shire Council acknowledges and pays respect to the Traditional Custodians of the lands of Cardinia Shire, the Bunurong and Wurundjeri people, and pays respect to their Elders, past, present and emerging.

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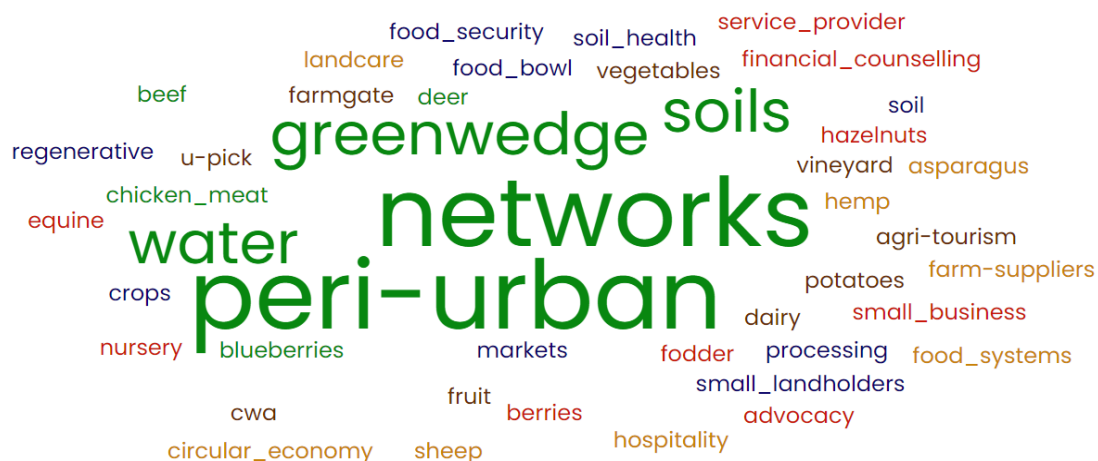
Cardinia Shire: Agricultural production landscape

Cardinia Shire is a major and reliable component of Melbourne's peri-urban interface, supporting primary production at scale.

The region makes significant contributions to food production, underpinned by resource-rich soils and the potential to become a water-secure, nature-positive food region.

Natural assets - soil, water, and climate - must be identified, valued, protected, and strengthened to ensure the productive capacity of these landscapes is retained and enhanced.

The area benefits from a reliable climate and highly productive soils, supplying fresh, diverse food staples to local, regional, interstate, and export markets.



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EXECUTIVE SUMMARY

The Cardinia Shire Council Agribusiness Audit was initiated as part of the Economic Development Strategy, following recognition of limited awareness within the region regarding the current economic contributions of the agribusiness sector to Victoria's food system.

The Agribusiness Audit is anchored in c, which presents a vision for a “robust and thriving economy that will attract, retain and grow businesses and jobs” through three strategic pillars:

Partnership & Regionalism, Experiencing Cardinia, and Creating the New Economy

Under these pillars, the audit project is designed to:

- Gather new landscape intelligence on agribusiness opportunities and constraints
- Enhance understanding of commodity trends and market forces
- Identify barriers to economic viability and expansion
- Identify opportunities for Council to proactively support and enable a resilient agribusiness sector consistent with Cardinia Shire's broader economic objectives

Key industry stakeholders, including the Victorian Farmers Federation (VFF) and the West Gippsland Progress Association (WPGA), had previously highlighted the need for an audit-style project to assess the overall status of agricultural contributions within the shire and to gain deeper insights into the challenges impacting viability, diversification, expansion, and long-term prosperity. In response to this need, Cardinia Shire Council allocated funding to undertake the Agribusiness Audit, which commenced in 2024. The project focused on engaging local industry stakeholders, to gather their insights and perspectives, through participation in facilitated stakeholder discussions, industry consultations and completion of a broad-based survey.

Understanding the shire's rural landscape - including current land-use patterns, seasonal activities, and the challenges identified by landholders, industry, and community stakeholders - reveals a complex set of circumstances. Issues such as drought impacts, water access, commodity price fluctuations, development pressures, management constraints, rising operating costs, and workforce availability require careful consideration. These realities present important matters for Council to acknowledge, review, and address within the scope of its local government responsibilities.

The audit findings confirm Cardinia Shire's position as a major food-producing region at the interface of metropolitan Melbourne, contributing an estimated \$500 million annually to the economy. Often referred to as part of Victoria's “Food Bowl,” the shire plays a critical role in supplying fresh food staples every day to metropolitan, regional, interstate, and export markets, as well as processors, hospitality businesses, and retailers.

Feedback from project participants consistently highlighted the region's natural amenity, the quality of its soils and climate for diverse agricultural production, and the appeal of rural living near metropolitan and regional services.

A recurring recommendation from stakeholders was to strengthen Council's engagement with rural landholders by allocating additional resources - both staff and funding - to

support those operating within the Green Wedge Zone. Key priorities include improving assistance for navigating the complexities of the local planning scheme, facilitating stronger industry networks, and expanding opportunities for landholder learning and development.

Snapshot of key findings

- **Food Bowl Identity:** Cardinia Shire lacks a clearly defined identity in terms of community awareness and understanding of its collective contribution to Victoria's integrated food bowl.
- **Agribusiness Officer:** Stakeholders identified the appointment of a dedicated Agribusiness Officer as a priority. This role would serve as an initial point of contact for rural landholders and provide referrals to relevant Council units.
- **Natural Resources:** The productive capacity of soils, favourable climate, and strategic location were consistently highlighted as key assets underpinning the shire's agricultural sector.
- **Rural Landscape:** Land fragmentation continues to restrict production capacity, particularly on smaller holdings.
- **Recycled Water:** Completion of infrastructure projects is expected to secure long-term access to Class A recycled water for vegetable growers, who currently rely on bores and surface water allocations.
- **Property Ownership:** The rural landscape comprises a mix of long-standing generational holdings (over 20 years) and newer ownership with shorter tenure (1 – 4 years).
- **Income:** Approximately 40% of rural landholders derive some level of agricultural income from their property.
- **Employment:** The sector employs a significant workforce. Survey data indicates that 37% of respondents work full-time and 42% part-time in agriculture-related roles.
- **Produce Distribution Networks:** Most commercially grown produce is transported out of the shire for wholesale, retail, and export markets.
- **Processing Facilities:** Local abattoirs and small-scale dairy processors provide limited opportunities for local sales of beef and milk.
- **Value Addition:** Most producers sell raw product to wholesale buyers for further packing, processing, or on-sale.
- **Packing:** Local packhouses handle seasonal commodities such as apples, potatoes, and asparagus for bulk packing and distribution.
- **Export:** While direct export activity is limited (primarily asparagus), several businesses have expressed interest in expanding into export markets.
- **External Threats to Viability:** Rising insurance costs, urban growth pressures, and increasing land prices were identified as key concerns.
- **Business Confidence:** Drought conditions have affected seasonal production levels and farmgate values, particularly for irrigated crops and pastures. Despite these challenges, confidence remains generally positive for both the short-term (12 months) and the longer five-year outlook.

Opportunities Identified Through the Audit

The following opportunities have been identified as priority areas for consideration in the development of the Food and Agribusiness Strategy. These represent potential actions that require further investigation to determine feasibility, resourcing, and alignment with Council objectives.

1. Policy and strategy

- 1.1 Investigate options to refine the Farmland Rate policy to improve equity and accessibility for diverse properties sizes and enterprise types. Consider linking eligibility to land stewardship practices such as weed control and biodiversity enhancements such as farm dam planting and shelter belts.
- 1.2 Explore advocacy opportunities for upgrades to freight and logistics infrastructure, including road, rail, and air transport, to improve the movement and sale of agricultural products.
- 1.3 Review Council's local procurement policy and consider including a percentage preference for locally produced food in catering contracts. Assess ways to support local businesses by increasing awareness of available products and purchasing pathways.
- 1.4 Assess current land banking strategies to ensure highly productive soils are protected from urban development. Consider strengthening existing policies that safeguard natural resources essential for long-term agricultural viability.
- 1.5 Explore options to improve access to seasonal irrigation water and review temporary allocation constraints to support productivity and resilience in irrigated cropping systems.

2. Governance and leadership

- 2.1 Explore the establishment of a Food and Agribusiness Advisory Committee as a mechanism for ongoing dialogue with farmers and industry and to inform development and priorities of the Food and Agribusiness Strategy.
- 2.2 Consider the potential benefits and resourcing requirements of appointing a dedicated Food and Agribusiness Officer to strengthen industry connections.

3. Industry engagement

- 3.1 Investigate options for convening an Agribusiness forum to bring stakeholders together on priority issues including commodity trends, water security, employment needs, and worker accommodation.
- 3.2 Explore the creation of a calendar of networking events to strengthen connections across rural communities and support agribusiness engagement.
- 3.3 Consider targeted outreach programs to build capacity among small landholders, including mentoring and practical support for improved land-use practices.
- 3.4 Facilitate discussions on regenerative farming practices and explore opportunities to continue supporting programs such as West Gippsland Progress Associations' initiative.

4. Research and data

- 4.1 Explore the development of a comprehensive supply chain map to illustrate the movement of local agricultural products and beyond the farm gate, identifying key sale points and distribution pathways
- 4.2 Investigate options to update the estimated value of agricultural output and undertake detailed case studies for each commodity, delivering a comprehensive economic analysis of agriculture and related sectors.
- 4.3 Consider implementing annual data collection on production, employment, farm types, and economic indicators, integrating data with GIS systems for accurate reporting and decision-making.
- 4.4 Explore partnerships with industry and universities to research and trial solutions for soil and water challenges, including salinity and chemical residue management, and establish local trial sites.

5. Marketing and Branding

- 5.1 Investigate initiatives to promote locally produced commodities through certification or branding and facilitate direct marketing of products to local butchers and consumers. Explore ways to increase community awareness of Cardinia's food production, provenance, and socio-economic contributions through targeted campaigns and branding initiatives.
- 5.2 Consider strategies to attract investment in agriculture and food manufacturing focusing on expanding local processing capacity and creating jobs.

6. Workforce development

- 6.1 Explore opportunities to support the diversity of enterprise scales and socio-economic contributions within the sector, providing technical learning and development opportunities to strengthen business resilience.
- 6.2 Consider continuing support for the Farmer and Small Business Mentoring Program and developing a consistent workshop series across the shire to assist with succession planning and business continuity.
- 6.3 Investigate skills training and employment initiatives to address labour shortages, leveraging proximity to urban areas to meet high seasonal demand.

The Food and Agribusiness Strategy will evaluate these opportunities, assess their potential impact, and determine which actions should be prioritised for implementation.

INTRODUCTION

Cardinia Shire Council is a major interface and growth area council located approximately 50 km south-east of Melbourne's CBD. It spans an area of about 1,281 km² and had an estimated population of 135,147 in 2024, which is forecast to grow by 35.28% to 182,833 by 2041 (CSC, 2025).

The shire forms part of Melbourne's green wedge land – non-urban areas that lie outside the urban growth boundary. This land is defined by the Victorian *Planning and Environmental Act 1987* to ensure agricultural land (amongst other land-use types) is protected for our future economic prosperity and community.

Victoria's green wedges include: Brimbank, Cardinia, Casey, Frankston, Greater Dandenong, Hobsons Bay, Hume, Kingston, Knox, Manningham, Maroondah, Melton, Mornington Peninsula, Nillumbik, Whittlesea, Wyndham and Yarra Ranges.

Cardinia Shire lies within the Port Phillip and Westernport Catchment Management region. This region supports diverse agricultural systems, including horticulture, beef, dairy, poultry (meat and eggs), viticulture, berries and fodder. It contributes significantly to Victoria's total production:

Vegetables: 23%

- Brussels sprouts: 99%
- Cauliflower: 87%
- Mushrooms: 86%
- Broccoli: 65%
- Lettuce: 53%

Fruit: 7%

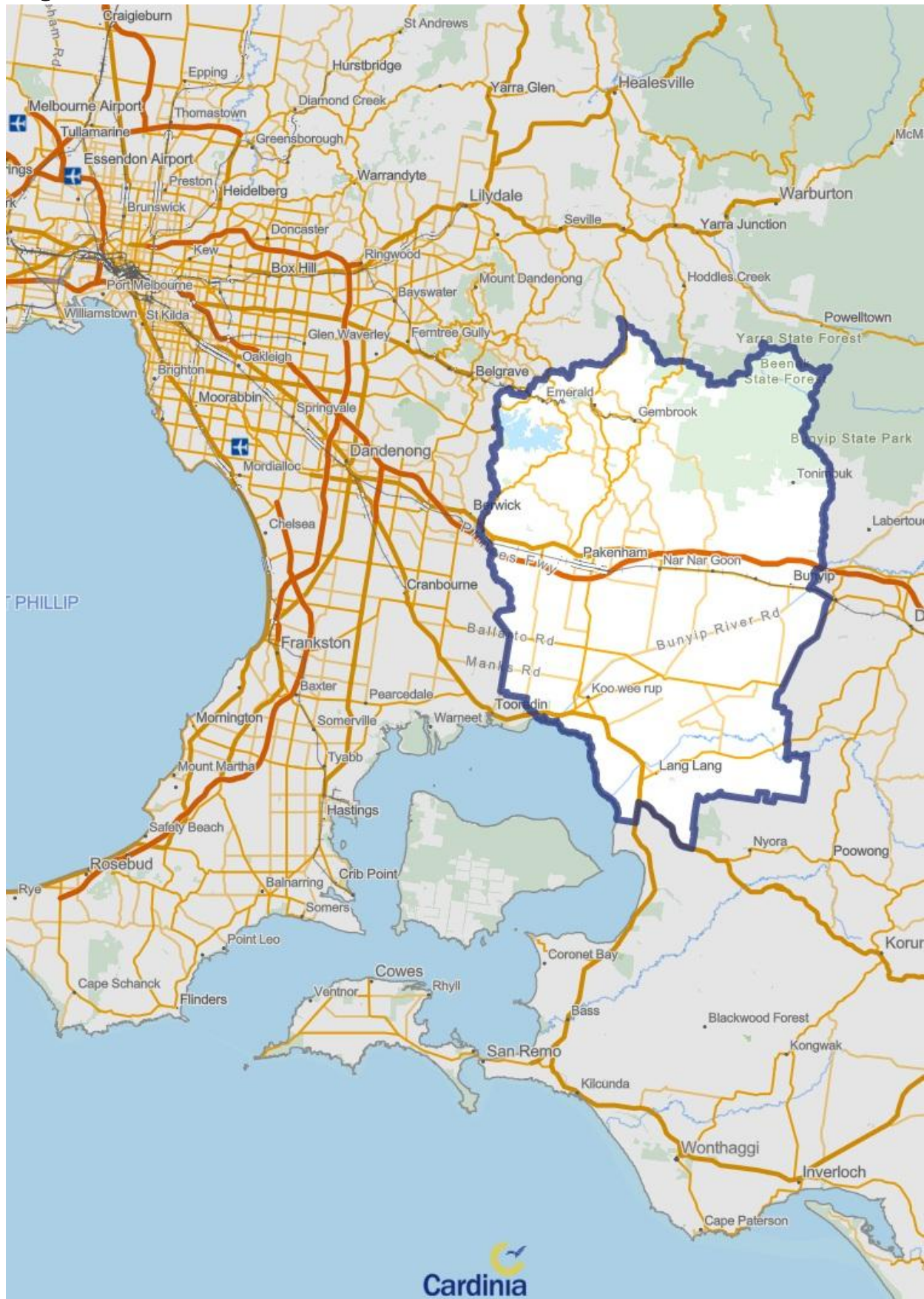
- Strawberries: 98%
- Kiwi fruit: 50%
- Blueberries: 49%

Poultry: 59%

(RMCG, 2022)

See Figure 1 for map of Cardinia Shire.

Figure 1: Cardinia Shire



Source: Cardimaps

Economic Development

Cardinia Shire Council (CSC) recognises the agribusiness sector as a significant contributor to the local economy. The Economic Development Strategy (EDS) 2023–2027 states:

“It has a strong agricultural sector, a developing industrial manufacturing sector, and large areas of underdeveloped land and connections to regional Victoria to support growing industry development and trends.”

The EDS also highlights Council’s commitment to developing a deeper understanding of agricultural production systems across the shire, including economic trends, land-use scale, planning constraints, and strategies to ensure food security.

For further details, refer to Appendix B: Audit link to Strategies and Plans.

Regional Profile

Cardinia Shire is a well-recognised peri-urban region where growth corridors, green wedges, rural residential areas, industry, and commercial agribusiness intersect, all characteristics typical of landscapes within 100 km of major cities. These areas face increasing pressure from rapid urban development and population growth, often at the expense of highly productive soils and agricultural capacity.

Urban expansion creates complex land-use tensions, with competing priorities threatening long-term agribusiness viability. Despite the visibility of urban development along major routes, the scale and economic contribution of commercial agriculture in Cardinia is often underappreciated. These farms supply essential fresh food staples through short supply chains, with frequent deliveries to local packers, processors, wholesalers, and retailers.

Peri-urban agricultural regions like Cardinia underpin local food security and supply chain resilience. They require greater recognition, support, and space for cost-effective expansion to maintain business confidence and profitability.

Rural land use overview

Agricultural land use occupies nearly two-thirds of the shire’s arable land. Smaller towns maintain a rural amenity setting, supporting opportunities for primary income generation through diverse enterprises, including:

- Poultry, beef, dairy and egg production
- Vegetables (e.g. broccoli, broccolini, potatoes, asparagus, leafy greens, carrots, onions)
- Apples, pears, berries, citrus, vineyards
- Fodder (silage, hay)
- Nurseries (Advanced trees, native plants), cut flowers
- Niche enterprises (e.g. herbs, spices, nuts, honey, truffles, alternative livestock)
- Agri-tourism, farmgate sales, contractors, suppliers, value addition, direct sales

The southern region is dominated by seasonal vegetables (asparagus, broccoli, leafy greens, celery, herbs), potatoes, beef, dairy, broiler chickens, eggs, apples, berries, and vineyards. Intensive production systems in these areas have adopted technology and

innovation to improve productivity and meet strict quality and compliance standards. The Koo Wee Rup and Dalmore swamps are key production zones.

In the northern region, small to medium mixed grazing enterprises prevail, alongside smaller-scale fruit, berries, vegetables, vineyards, and cottage industries producing nuts, honey, herbs, and alternative livestock.

Data from ABARES (2024) identifies 725 businesses in the Agriculture, Forestry, and Fishing category within Cardinia Shire, consistent with ABS data for the same period.

Sub District	# of businesses: Agriculture, forestry and fishing	Year	# of businesses Agriculture, forestry and fishing
Pakenham: Northwest	16	2020	741
Pakenham: Southwest	17	2021	743
Pakenham: Southeast	15	2022	739
Pakenham: Northeast	12	2023	730
Koo Wee Rup	274	2024	717
Garfield-Bunyip	264	ABS: Economy & Industry (2025)	
Officer-Beaconsfield	19		
Emerald-Cockatoo (inc. Gembrook)	108		
Total	725		

Turnover of 75K/annum

Source: SA2 Economy and industry (Data by region) (2023)

Employment

Agriculture remains a key employer in Cardinia Shire. As of June 2024, direct agriculture-related employment is estimated at 1,800 full-time equivalent (FTE) positions, representing approximately 4.6% of the local workforce of 39,000 (NIEIR, 2024).

Employment spans:

- Full-time and part-time farm roles
- Seasonal labour hire for planting, harvesting, and pack-out
- Livestock management (beef, dairy, poultry)
- Transport and logistics for livestock and fresh produce
- Packing sheds for washing, packing, and distribution

ABARES Catchment-Scale Land Use Profile

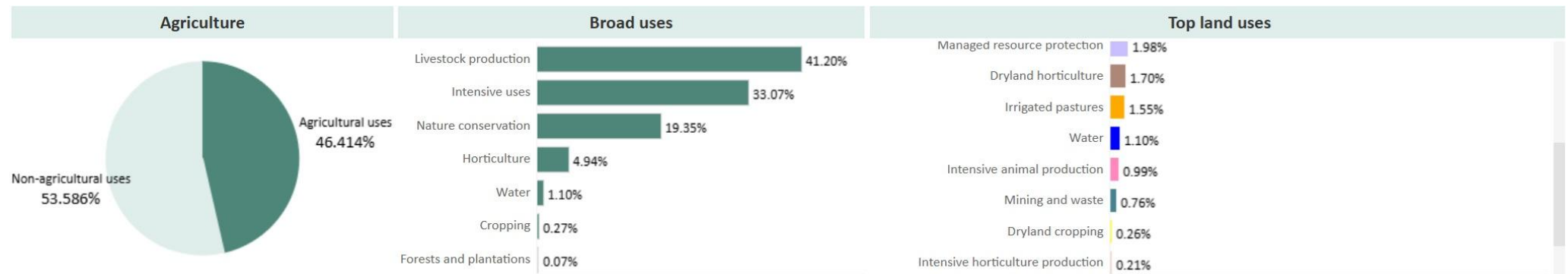
ABARES provides catchment-scale land use profiles for each local government authority in Australia. Data from December 2023 shows the following land use distribution for Cardinia Shire:

- Non-agricultural uses: 53.58%
- Agricultural uses: 46.41%, comprising:
 - Grazing modified pasture: 38.67%
 - Rural residential: 19.35%
 - Irrigated horticulture: 3.04%
 - Dryland horticulture: 1.70%
 - Irrigated pasture: 1.55%
 - Intensive animal production: 0.99%

(Source: ABARES, 2023)

See Figure 2 for catchment scale land use.

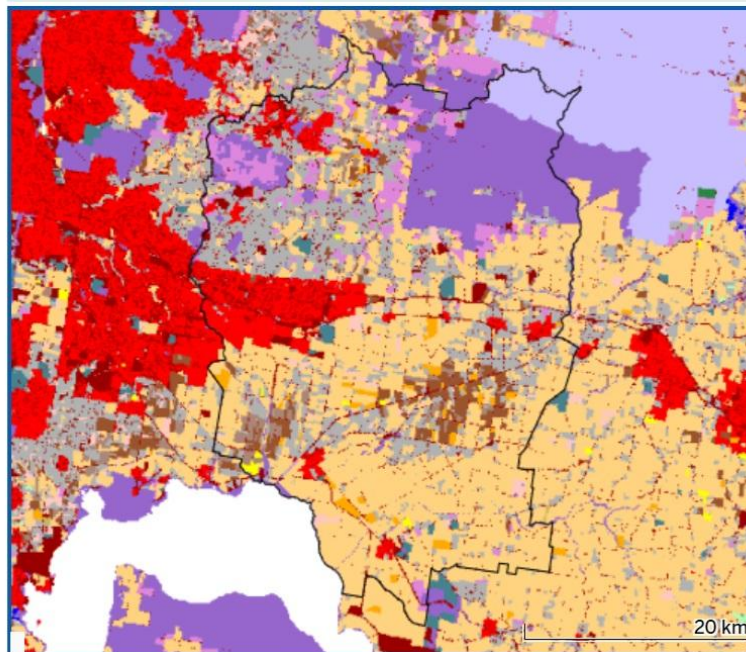
Figure 2: ABARES (2024) Catchment scale land use profile dashboard – Local government area: Cardinia (Dec 2023)



Land use summary for Cardinia, Victoria

			Area (ha)	Share
Agricultural uses	Livestock production	Grazing modified pastures	49,595	38.67%
		Irrigated pastures	1,984	1.55%
		Intensive animal production	1,266	0.99%
	Cropping	Dryland cropping	332	0.26%
		Irrigated cropping	16	0.01%
	Horticulture	Dryland horticulture	2,177	1.70%
		Irrigated horticulture	3,896	3.04%
		Intensive horticulture production	267	0.21%
Non-agricultural uses	Nature conservation	Nature conservation	17,791	13.87%
		Managed resource protection	2,533	1.98%
		Other minimal use	4,495	3.50%
	Forests and plantations	Plantation forests	91	0.07%
		Urban residential	8,615	6.72%
	Intensive uses	Rural residential	24,816	19.35%
		Other intensive uses	8,014	6.25%
		Mining and waste	969	0.76%
	Water	Water	1,408	1.10%
Grand Total			128,262	100.00%

Land use in the Cardinia region



Date of mapping



Location



© Mapbox © OSM

<https://www.agriculture.gov.au/abares/aclump/land-use/catchment-scale-land-use-profile-lga>

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Soil Diversity and Land Capability

Cardinia Shire exhibits significant variation in soil structure, texture, fertility, and productive capacity. This diversity supports a wide range of agricultural and horticultural activities across the region.

In 2013, the Victorian Eco-Innovation Lab (VEIL) conducted land capability mapping across Melbourne's peri-urban councils. The analysis for Cardinia Shire identified the following:

- **Total area:** 128,421 hectares
- **Survey coverage:** Approximately 75% of the land area

Land Classes and Productive Capacity

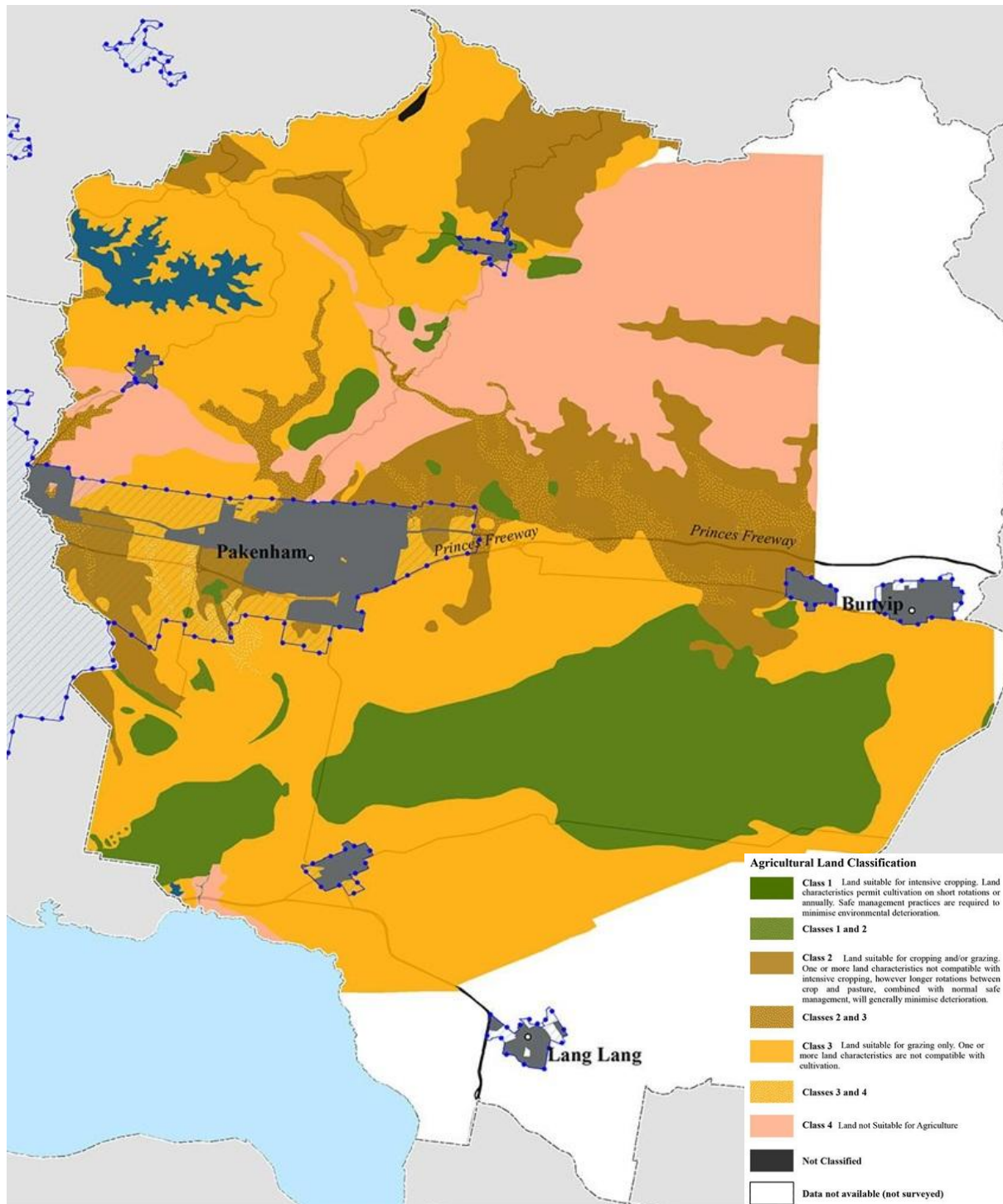
- **Class 3** (47,000 ha / 49%) – Suitable for grazing; requires careful management of grazing pressure to prevent land degradation.
- **Class 4** (18,000 ha / 19%) – Not suitable for cropping or grazing.
- **Class 1** (16,500 ha / 17%) – Highly suitable for intensive cropping.
- **Class 2** (13,500 ha / 14%) – Suitable for intensive cropping or grazing, but more prone to land degradation.

Distribution of Land Classes

- **Class 1:** Concentrated between Koo Wee Rup and Bunyip, including the townships of Bayles, Catani, Iona, Modella, Vervale, and Cora Lynn. This area falls within Green Wedge and Special Use planning zones and is well-suited for irrigated horticulture.
- **Class 2:** Located north of the Princes Highway between Pakenham and Bunyip, supporting mixed enterprises such as livestock grazing, orchards, vineyards, berries, nuts, fruits, flowers, and olives.
- **Class 3:** Extends throughout the shire and corresponds to the extensive “grazing modified pastures” area identified by VEIL (2013).

See Figure 3 for VEIL map of land class systems.

Figure 3: Land Class systems across the Cardinia Shire



Source: VEIL (2013) – Note: VEIL study did not cover Cardinia Shire in its entirety

Soils: Productive capacity

Within these land classes, several soil types underpin the productive capacity of Cardinia Shire. Each is widely recognised for specific traits that influence agricultural suitability:

- **Dalmore (Da):**
A fertile, self-mulching black friable clay approximately 200 mm deep, strongly acidic (pH 4.7–5.9). At around 700 mm depth, an approximately 100mm layer of black peaty clay overlies grey impervious clay. These soils have high organic matter and occur extensively across the Koo Wee Rup Swamp area, including Cora Lynn, Iona, and Bayles. Highly sought after for vegetable production, particularly for asparagus (WPLCN, 2015).
- **Vertosol:**
Clay soils with at least 35% clay in the surface horizon. Their shrink-swell properties create deep cracks when dry, extending into the subsoil. In the Koo Wee Rup region, Vertosols have developed on swamp deposits and often include a peaty layer at depth. They are highly valued for cropping, especially potatoes and asparagus.
- **Warragul (Wg):**
Deep, fertile red clay loams found in the undulating hills around Gembrook. The surface is a friable clay loam grading into crumbly clay loam or light clay at 20–40 cm, increasing to medium clay at about 1 m depth. These soils support dairy, beef, and cropping enterprises.
- **Monomeith (M):**
Occurs on extensive plains southwest of the former Koo Wee Rup Swamp. Comprises grey or brownish-grey clay loams overlying mottled yellow-brown clay. Commonly used for improved pastures grazed by cattle. In wet winters, stock can pug the soil, leaving a hard uneven surface in summer. Strongly acidic (pH 5.0–5.8).
- **Bittern (B):**
Fine-structured soils with an acidic pH around 5.9. While naturally suited to pasture, the addition of fertilisers and organic matter enables intensive horticultural production, including vegetables and orchard crops. Occurs near coastal areas, where salt content can lead to sodium accumulation in subsoil, restricting root development and water penetration.
- **Narre (N):**
Found on plains adjoining granite foothills in the northern catchment. Primarily used for cattle grazing and requires careful management to minimise structural damage during extended wet periods. (Summary provided by P. Ronald, 2025)

Farm management considerations

There are several soil characteristics that influence the degree to which agricultural productive capacity can be maximised or restricted within a particular land class. These include:

- pH
- Organic carbon levels
- Nutrient availability
- Structure & texture
- Sub-soil constraints, compaction, and hard pans
- Drainage, infiltration capacity
- Sodidity and salinity

(G Stewart, 2012)

Even on soils with lower inherent productivity, significant areas of mixed grazing are maintained. Pastures persist where seasonal rainfall and climatic conditions support a high carrying capacity for year-round production. Farmers in the region emphasise the importance of skilled management, particularly the timing of key practices, to optimise soil performance and achieve both high yield cropping and sustainable grazing outcomes.

Planning Controls

Across the shire, agricultural production activities are primarily located in the Green Wedge Zone (GWZ) or Special Use Zone (SUZ).

Green Wedge Zone (GWZ)

This zone is designed to recognise and protect non-urban land located outside the Urban Growth Boundary (UGB) within metropolitan Melbourne. Its purpose is to safeguard land for its agricultural, environmental, historic, landscape, recreational, and mineral or stone resource values.

The zone specifies a minimum lot size of 40 hectares, unless an alternative is outlined in the relevant schedule. Creation of smaller lots may be permitted under certain circumstances.

Green Wedge A Zone (GWAZ)

This zone provides opportunity for most agricultural uses and limits non-rural uses to those that support agriculture or tourism provided that the amenity of residential living is protected.

Special Use Zone (SUZ)

The Cardinia Shire Special Use Zone (SUZ) provides for the use of land for specific purposes. The highest classified soils in the south have been declared a Horticultural Preservation **Special Use Zone (SUZ)** for specific purposes including:

- To preserve land of high agricultural quality for horticulture and other farming activities

- To discourage non-agricultural and non-soil-based uses establishing on soils of high agricultural value
- To protect the area from the encroachment of urban and rural residential type development
- To minimise the potential for conflict between residents and normal farming practices that are related to the conduct of agricultural activities
- To encourage sustainable farming activities based on whole farm and catchment planning principles on an individual and community basis (CSC 2025_planning)

Water

The Shire is located within two water catchments:

- Yarra Valley (20% of the Shire): North
- Western Port (80% of the Shire): South

Responsibility for the maintenance and regulation of urban and rural water supplies across Cardinia Shire is with the following main authorities:

- **South East Water:** a service provider of potable water, sewage and recycled water services (south)
- **Yarra Valley Water:** a service provider of potable water, sewage and recycled water services (north)
- **Southern Rural Water:** regulator of surface and groundwater access by rural customers

There are several waterways that extend through Cardinia shire including river systems, creeks, main drains and local catchment drains. The major waterways include:

Rivers	Creeks
Bunyip	Cardinia
Lang Lang	Bessie
	Gum Scrub
	Toomuc
	Cannibal
	Back
	Deep
	Ararat
	Cockatoo
	Gembrook
	Shepherds

Rivers & Creeks

Bunyip River: Also referred to as the Bunyip Main Drain, this river system comprises the Tarago and Bunyip Rivers, which converge above the Princes Highway near the township of Bunyip. The headwaters originate within the Bunyip State Forest and the Black Snake Range.

Lang Lang River: The second-largest waterway in the municipality, the Lang Lang River extends from its headwaters near Ranceby and Poowong and flows into Western Port Bay

near the Lang Lang township. While the river's bed and banks remain in a semi-natural condition, sections of its course - particularly below Yannathan - feature man-made interventions.

Cockatoo Creek: Flows through Cockatoo township, supports mixed horticulture and grazing.

Gembrook Creek: Key waterway in the northern hills, influences irrigation potential for niche crops.

Shepherds Creek (East & West Branch): Tributaries feeding into Woori Yallock system; streamflow monitoring at Yellingbo regulates dam licensing.

These tributaries form part of the Woori Yallock Creek catchment. On-stream dam management is linked to stream-flow rates at Yellingbo, which is critical for planning intensive farming in Class 2 red soil districts around Cockatoo and Gembrook.

Creeks and Flooding

The Cardinia, Deep, and Toomuc Creek catchments are important waterways within the municipality, particularly for irrigation purposes. In their lower reaches, these creeks have undergone significant modification.

Waterways that discharge into Western Port Bay are subject to tidal influences. During extreme conditions - such as when floodwaters coincide with very low atmospheric pressure - predicted water levels can vary considerably. Despite extensive drainage infrastructure, the Koo Wee Rup area remains highly vulnerable to flooding. Its flat, low-lying terrain makes it prone to water pooling during periods of heavy rainfall (MW, 2025).

Seasonal Conditions

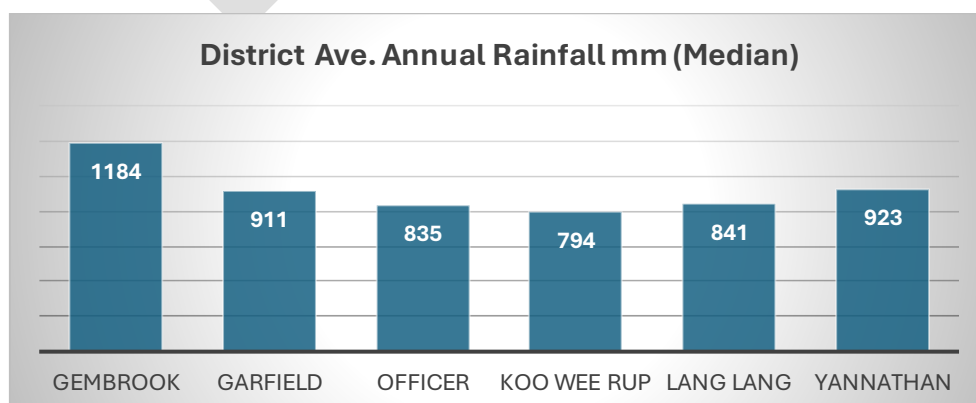
Climate

The shire experiences a temperate climate, characterised by distinct seasonal patterns: warm, long days in summer and cold, short days in winter. Regions within this climate zone typically receive higher rainfall during winter than in summer (BOM, 2024).

Rainfall

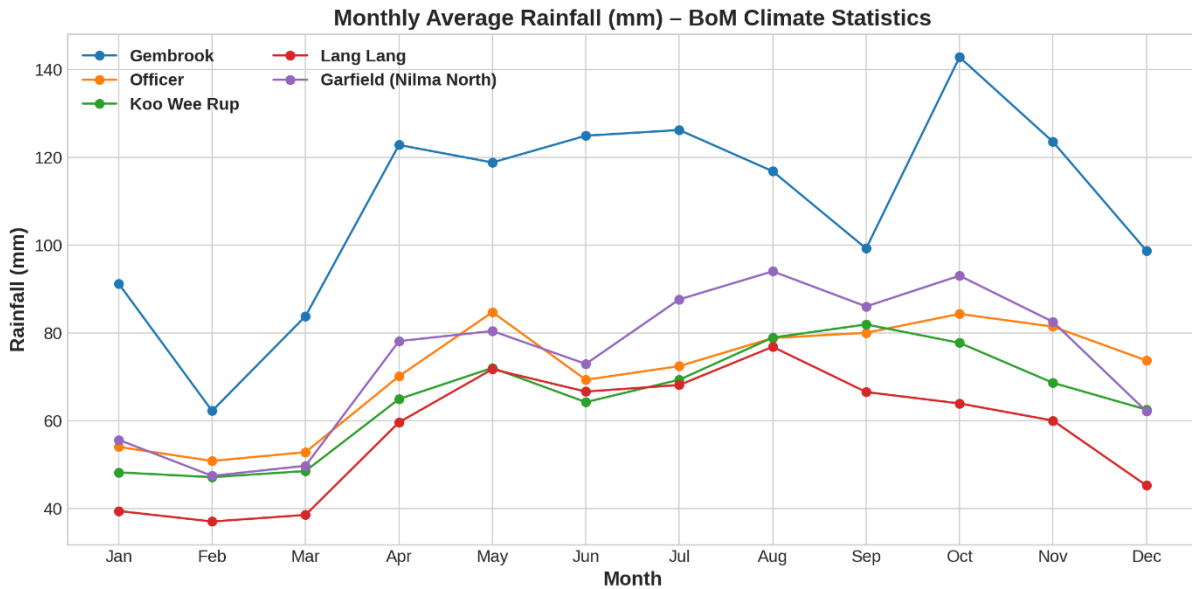
Average median rainfall varies between the north and south districts within the shire ranging from 1184mm in Gembrook to 794mm in Koo Wee Rup throughout 2024.

Figure 3: 2024 Annual Median district rainfall (mm)



ARM (2024)

Figure 4: Long-term monthly rainfall means



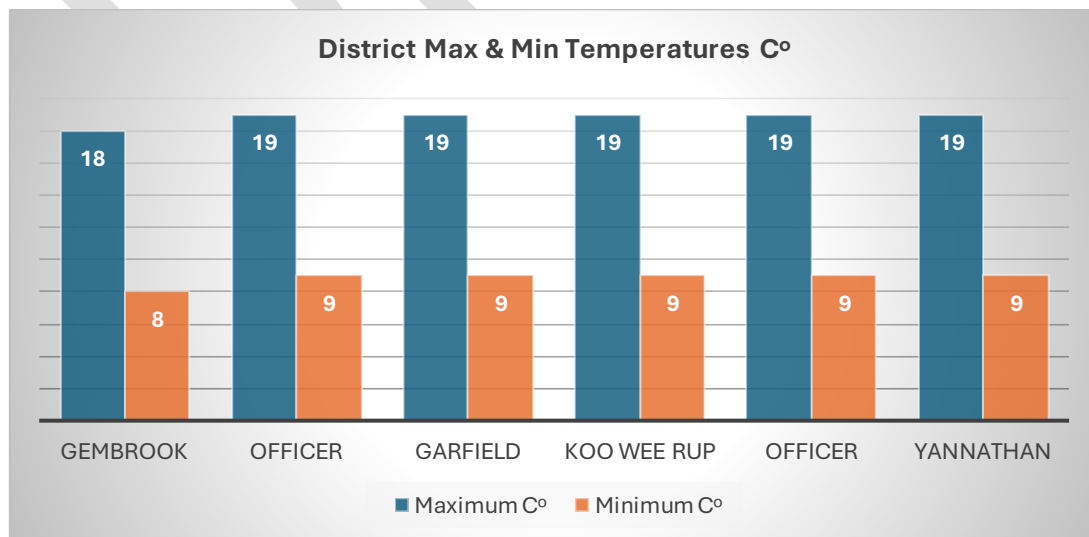
Data sources (BoM Climate Data): Gembrook (Ferny Creek BoM 086266) 2011–2025, Officer (Scoresby Research Institute BoM 086104) 1948–2025, Koo Wee Rup (086314) 1957–2023, Lang Lang (Rhyll BoM 086373) 1994–2025, Garfield (Nilma North BoM 085313) 2014–2025

Climate impacts:

Rainfall patterns are expected to remain highly variable over time. However, long-term projections indicate a continued decline in winter and spring rainfall (medium to high confidence) and in autumn (low to medium confidence), with some possibility of little overall change. Extreme rainfall events are projected to become more intense on average throughout the century (high confidence), although their occurrence will remain highly variable across both space and time (CSC, 2022).

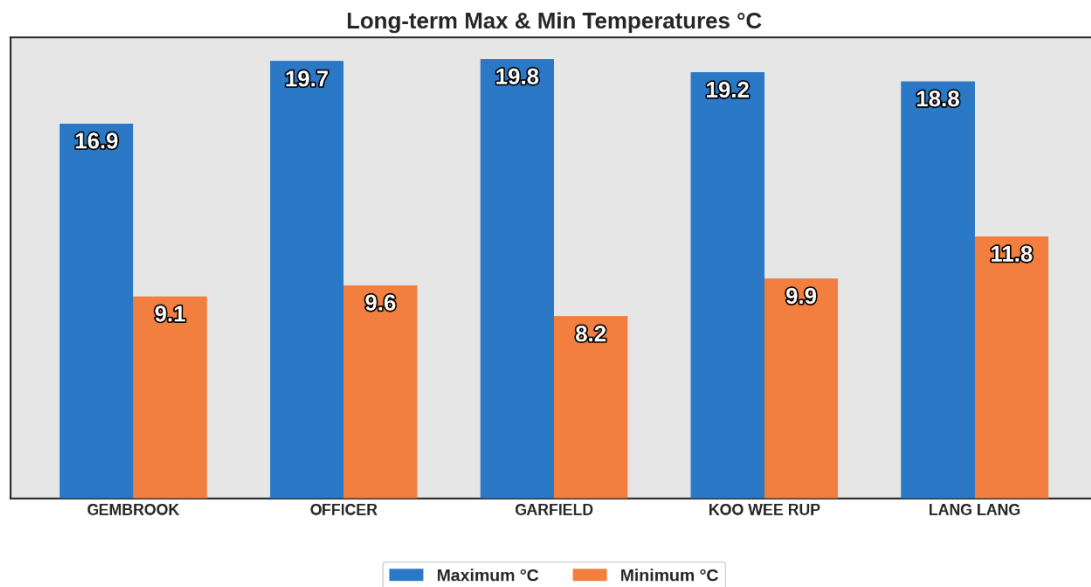
Temperature

Figure 5: 2024 Min-Max temperature by district



ARM (2024)

Figure 6: Long-term Min-Max temperature by district



Data sources (BoM Climate Data): Gembrook (Ferry Creek BoM 086266) 2011–2025, Officer (Scoresby Research Institute BoM 086104) 1948–2025, Garfield (Noojee BoM 086351) 1990–2025, Koo Wee Rup (Cerberus BoM 086361) 1990–2025, Lang Lang (Rhyll BoM 086373) 1990–2025

Climate impacts

Maximum and minimum daily temperatures are projected to rise throughout this century (very high confidence). By the 2030s, average daily maximum temperatures are expected to increase by approximately 0.8 °C to 1.6 °C compared to 1990s levels (CSC, 2022). For more detailed information on potential climate change impacts, refer to Cardinia Shire Council's publication Climate Change Adaptation Strategy 2022–2023.

PROJECT SCOPE

Aim

The aim of the 2024-2025 Agricultural Audit project was:

1. Conduct a comprehensive agricultural audit that captures data on current farming practices, land use patterns, crop diversity, livestock management, and sustainability initiatives.
2. Engage and collaborate with local farmers, agribusinesses, and other stakeholders to gather insights and perspectives on Cardinia's role in food production, its reach, and its impact on broader food access pathways.

Objectives

1. Engage and collaborate with local farmers, agribusinesses, and other stakeholders to gather insights and perspectives on Cardinia's role in food production, its reach, and its impact on broader food access pathways.
2. Understand the needs, opportunities, and challenges faced by the agricultural industry, providing a platform to raise critical issues requiring follow-up action.
3. Produce a comprehensive report on the state of agriculture in Cardinia Shire, highlighting the economic significance of farming to the region.

4. Identify and document opportunities for Council to explore in the forthcoming Food and Agribusiness Strategy, ensuring these are assessed for feasibility, resourcing and alignment with strategic objectives.

Methodology

A Project Working Group (PWG) was established, comprising internal knowledge experts from various Cardinia Shire service areas. The PWG provided guidance on the project approach, contextual background, and peer review of progress and outputs.

A consultant was engaged on a casual basis to deliver professional project design, oversight, and feedback. Acting as a PWG member, this role contributed subject matter expertise, advised on scope and methodology, facilitated consultation activities, and participated in peer reviews at key milestones, including the formulation of findings and recommendations.

Key planning activities included preparing a Project Overview Statement, defining timeframes, establishing project folders, and developing an Engagement and Communications Plan. Project timelines were structured as outlined below:

Engage & Project Planning	Collect Data & Literature Review	Consult Workshops & Surveys	Review Results & Draft Report	Final Report & Action Plan
2024	2024	2024	2025	2026

Refer to APPENIDIX A for more details on the Project methodology.

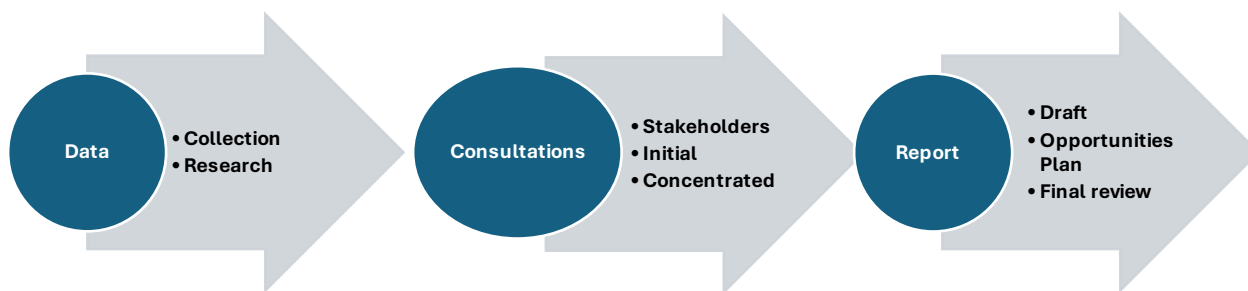
Target Audience

This report is intended to serve as a concise overview of Cardinia Shire's diverse rural land-use activities and provide insights that strengthen connections and collaboration among stakeholders who live and work within the community.

Key stakeholders include:

Council	Agribusiness industry	Rural Landholders
Consultants	Community	Government
Policy Makers	Contractors	NRM Groups
Agri-tourism	Food Businesses	Freight and Logistics

Project: Stages and Outcomes



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Data Collection and Research

Desktop research was undertaken to review comparable projects and studies, providing reference points for effective and practical stakeholder engagement processes.

Statistical and financial data were sourced from ID, REMPLAN, the Australian Bureau of Statistics (ABS), ABARES, and the Horticulture Handbook, supplemented by industry and other relevant datasets where available.

The research phase included statistical and spatial mapping, land capability assessments, land-use validation, farming types, and production volumes and values. A review of existing reports, frameworks, and tools at regional, national, and international levels was also conducted. Additional input from internal and external knowledge experts, along with interviews with local industry stakeholders, helped identify available data.

Further research confirmed key stakeholders and existing relationships. Once this initial phase was complete, data gaps were identified, and primary engagement activities were implemented to address these gaps.

Stakeholder Consultation

The Initial Consultation Phase focused on engaging rural landholders and agri-food industry stakeholders to gather feedback and insights. This phase involved online surveys and informal interviews to collect data on land size, land-use activities, market access, revenue generation, investment plans, and business constraints. The information helped evaluate market trends, emerging technologies, and the adoption of best-practice agricultural production systems.

The Concentrated Consultation Phase explored opportunities for diversification, value addition, and sustainable practices. It also assessed challenges faced by local farmers, including environmental, economic, social, financial, and regulatory factors.

Online Surveys

An online survey was conducted to validate data on land ownership demographics, property size, principal land-use activities, commodity volumes and values, market access, revenue streams, investment plans, and business constraints.

The survey was promoted through a dedicated “Cardinia Agribusiness Audit” webpage and complemented by an email and mail-out campaign to all property owners receiving the Cardinia Shire Farmland Rate (FLR), classified as primary production land.

The categories of survey included:

- Primary production (including aquaculture)
- Food and beverage manufacture/agricultural processors
- Agritourism: products and services underpinned by a link to local agricultural activities
- Government agencies: impacts and opportunities
- Agribusiness: scale x commodity type
- Industry organisation support (Catchment, Water, Commodity groups)
- Ancillary Rural Business Services access (i.e. inputs/fuel/fertiliser/energy suppliers, veterinarian, feed suppliers)

- Other production industries (nursery/horticulture/flowers/equine)
- Freight, logistics, market access
- Education, Employment and Income generation status

Semi-Structured Interviews

Semi-structured interviews were conducted with commercial operators and industry stakeholders to capture diverse perspectives on key issues, emerging opportunities, and their impact on the local food economy and existing relationships. Participants represented a broad range of groups, including:

- Food & fibre producers
- Beverage processors & winemakers
- Agribusiness advisors and suppliers
- Food retailers, wholesalers
- Food procurement organisations
- Food and Agri-tourism
- Local industry representative organisations (VFF, EDRA)
- Community organisations (Catchment, Landcare, CWA)

Concentrated Consultation

Workshops

Three “Cardinia Farming and Food Futures” workshops were held - one online and two face-to-face sessions in Koo Wee Rup and Gembrook. These workshops facilitated cross-industry stakeholder engagement, encouraging open dialogue and collaboration. Discussions highlighted common issues and shared priorities across participants.

Feedback was captured on topics such as:

- Doing business in Cardinia Shire
- Current farming practices
- Land-use activities
- Crop diversity
- Livestock management
- Sustainability initiatives
- Potential opportunities for growth

The workshops attracted a broad audience, including farming, food, and agribusiness representatives, external stakeholders, service providers, and associated agencies. They also promoted participation in the online survey, ensuring comprehensive and relevant information gathering.

DISCUSSION

External Data

A review of existing external datasets was undertaken to determine what information is currently collected and to identify any limitations.

Data limitations

The scope of ABS agricultural surveys changed in 2015–16, raising the Estimated Value of Agricultural Output (EVAO) threshold from \$5,000 to more than \$40,000. Consequently, smaller holdings earning below \$40,000 are excluded from ABS data. This includes enterprises such as:

- Grazing (sheep and cattle)
- Contracted hay production on fragmented parcels (2–30 ha)
- Other part-time agricultural operations reliant on off-farm income

These exclusions undervalue the collective contribution of smaller-scale enterprises to the local agricultural economy.

Farmland Rate (FLR)

As part of the Agricultural Audit, the 2024 Cardinia Shire Farmland Rate (FLR) database was reviewed to verify land-use activities eligible for inclusion under this rating category. The FLR provides a reduced annual rate for rural landholders who undertake some level of commercial agricultural production on their property.

Eligibility criteria include:

- Farms of 40 hectares or more located outside the Urban Growth Corridor
- Farms under 40 hectares assessed by application, based on the intensity and scale of agricultural activity
- Highest concentrations of FLR land parcels occur in districts such as Koo Wee Rup, Nar Nar Goon, and Pakenham (see Table 3)
- Total FLR area: 56,622.47 hectares across 2,592 land parcels (Tables 4 & 5)

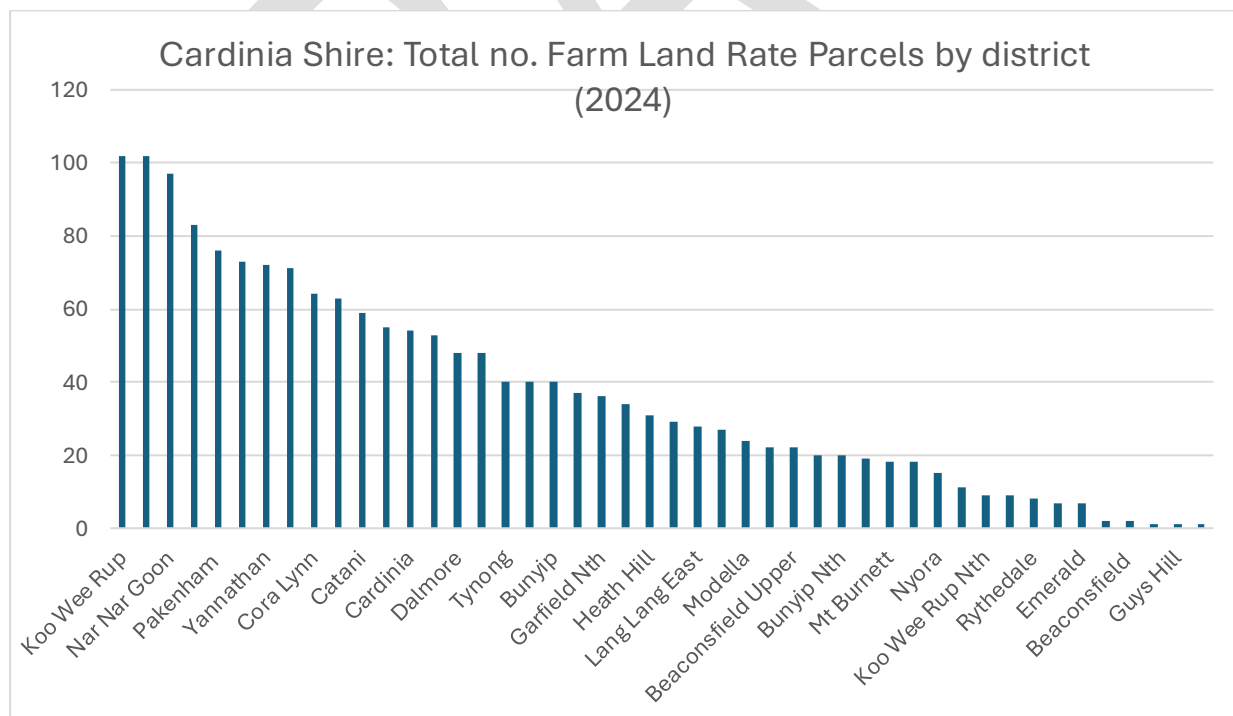


Table 3. Cardinia Shire: Total FLR parcels by district

Table 4 provides a more detailed breakdown of land-use types; however, horticulture and dairy are understated. Many of these activities have been grouped under the mixed grazing category (>20 ha).

Table 4: Farmland Rate (FLR) Land-Use Activities by Area (ha)

Land use	Ha
Grazing & farming > 20 ha	50721.51
Lifestyle < 20 ha	1592
Subdivision	994
Broiler	923
Development land	681
Dairy	388.7
Ancillary	317
Cropping	279
Orchards	199.2
Plant Nursery	150.6
Equine	89.34
Tourism	68
Vegetables	65.5
Vineyard	49.2
Forestry	47
Flower & Plant	47
Glasshouse	8
Eggs	2.42
Total	56622.47ha

Table 5: General Summary of Farmland Rate (FLR) Land-Use Activities (2024)

Land use	No. of parcels
Mixed farming & Grazing > 20ha	2100
Rural Lifestyle 04-20ha	186
Rural lifestyle	77
Poultry	48
Ancillary & Industrial Vacant	61
Subdivision	45
Equine	19
Cropping	17
Orchards	12
Nursery_ Flower	7
Native vegetation, Forestry	8
Dairy	6
Vineyard	2

Market Garden	2
Small animal	2
Total parcels	2592

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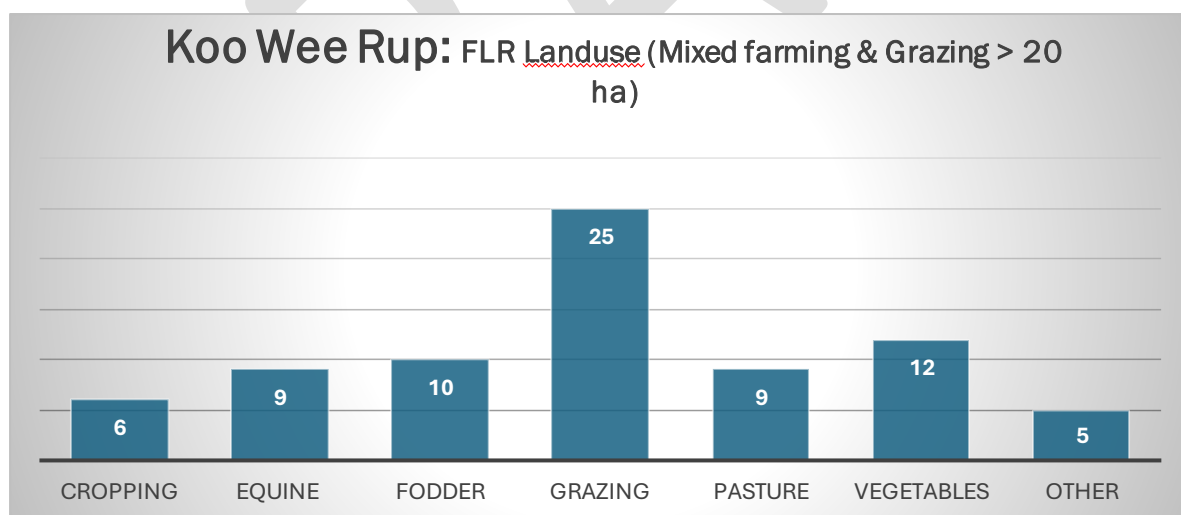
Farmland Rate: Districts

FLR data was cross-checked against industry sources, ABS and ABARES datasets, focus group feedback, and survey results to validate land-use activities.

Further analysis of the mixed farming and grazing (>20 ha) category was undertaken in districts including Koo Wee Rup, Gembrook, Iona, Pakenham, Yannathan, Lang Lang, and Nar Nar Goon. Aerial mapping was used to identify more specific land-use activities within this category, confirming additional cropping, dairy, horticulture, fodder, and equine enterprises that were understated in the general summaries.

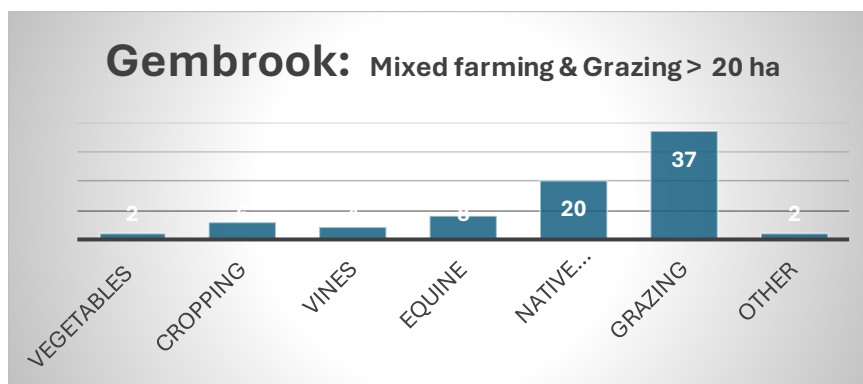
Detailed summaries of FLR categories for these districts are provided below:

Koo Wee Rup		Mixed Farming & Grazing (>20 ha)	
FLR Category	No. Parcels	Predominate Land use	No. of parcels
General cropping	1	Cropping	6
Fruit & Vegetable Crops	2	Equine	9
Broiler	2	Fodder	10
Ancillary Buildings	3	Grazing	25
Vacant (Rural Lifestyle)	5	Pasture	9
Rural resident (0.4-2ha)	14	Vegetables	12
Mixed farming & Grazing (> 20 ha)	76	Other	5
Total	103	Total	76

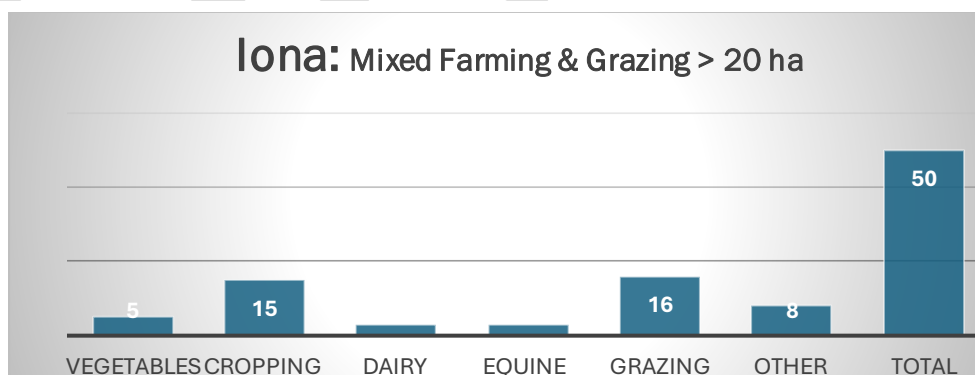


Gembrook		Mixed Farming & Grazing (>20 ha)	
FLR Category	No. Parcels	Predominate Land use	No. of parcels
General Cropping	1	Vegetables	2
Retail - Nursery	1	Cropping	6
Ancillary	2	Vines	4
Plant tree/Nursery	2	Equine	8

Rural Lifestyle	2	Native vegetation	20
Native Vegetation - Vacant	3	Grazing	37
Rural Lifestyle (0.4 to 20 Hectares)	12	Other	2
Mixed Farming & Grazing > 20ha	79	Total	79
Total	102		

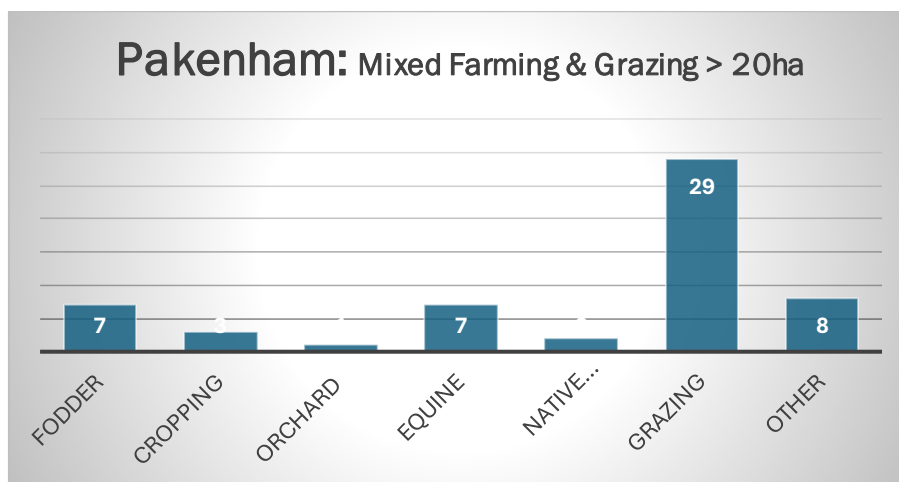


Iona		Mixed Farming & Grazing (>20 ha)	
FLR Category	No. Parcels	Predominate Land use	No. of parcels
Cropping	2	Vegetables	5
Ancillary	3	Cropping	15
Broiler	1	Dairy	3
Rural Lifestyle	9	Equine	3
Rural < 20 ha	8	Grazing	16
Mixed Farming & Grazing > 20 ha	50	Other	8
Total	73	Total	50

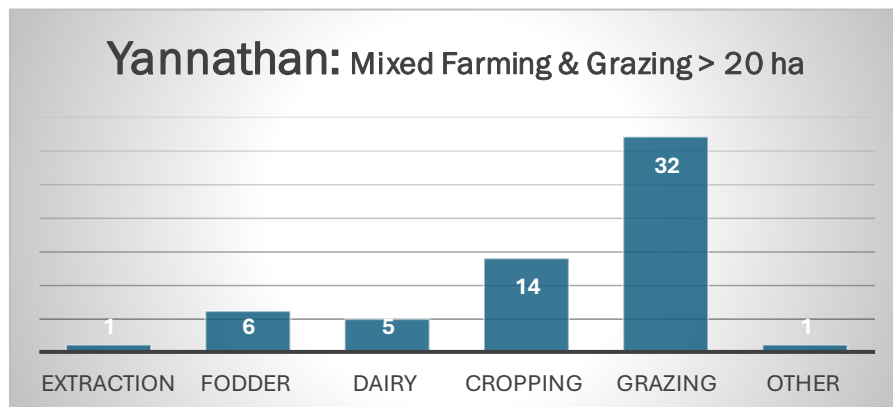


Pakenham			
FLR Category	No. Parcels	Mixed Farming & Grazing (>20 ha)	
Flower	1	Predominate Land use	No. of parcels
Orchard	1	Fodder	7
Ancillary	2	Cropping	3

Vacant	3	Orchard	1
Broiler	3	Equine	7
Native Vegetation	2	Native vegetation	2
Rural Lifestyle (0.4 to 20 Hectares)	7	Grazing	29
Mixed Farming & Grazing > 20ha	57	Other	8
Total	76	Total	57

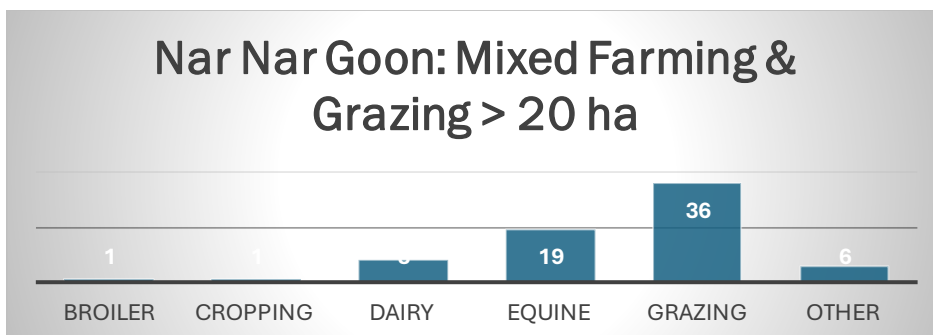


Yannathan			Mixed Farming & Grazing (>20 ha)	
FLR Category	No. Parcels		Predominate Land use	No. of parcels
Dairy	1		Extraction	1
Ancillary	1		Fodder	6
Broiler	5		Dairy	5
Rural Lifestyle	6		Cropping	14
Mixed Farming & Grazing > 20 ha	59		Grazing	32
Total	72		Other	1
			Total	59

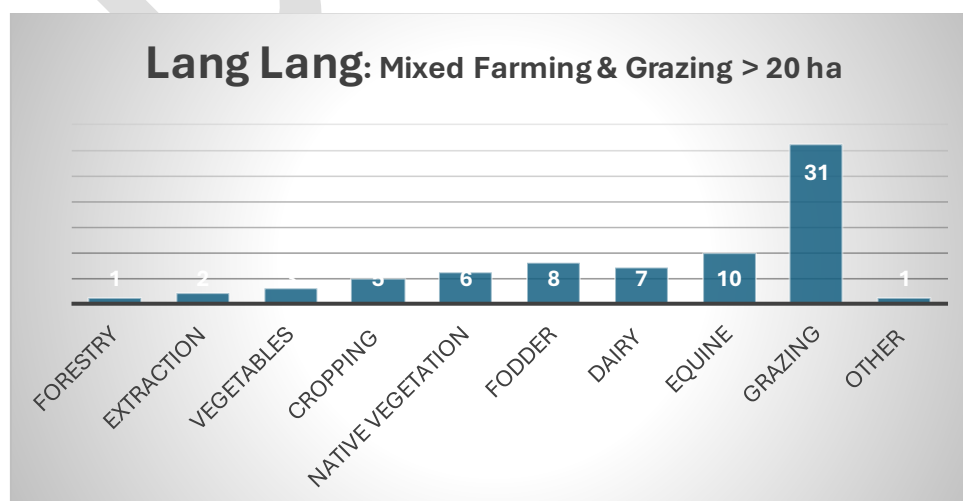


Nar Nar Goon		Mixed Farming & Grazing (>20 ha)	
FLR Category	No. Parcels	Predominate Land use	No. of parcels
Cropping	1	Broiler	1

Ancillary	6	Cropping	1
Broiler	6	Dairy	8
Equine	1	Equine	19
Rural Lifestyle	5	Grazing	36
Mixed Farming & Grazing 20 ha	78	Other	6
Total	97	Total	78



Lang Lang		Mixed Farming & Grazing (>20 ha)	
FLR Category	No. Parcels	Predominate Land use	No. of parcels
Forestry	1	Forestry	1
Ancillary	4	Extraction	2
Broiler	3	Vegetables	3
Native vegetation	1	Cropping	5
Mixed Farming & Grazing > 20 ha	74	Native vegetation	6
Total	83	Fodder	8
		Dairy	7
		Equine	10
		Grazing	31
		Other	1
		Total	74



Land-Use Activities

The ABARES Catchment Scale Land Use Summary Dashboard provides additional detail on agricultural land use within the shire, expressed as percentages and total area (ha). This information is valuable for comparison with current FLR data categories and parcel allocations. Key insights include:

- Livestock production / grazing modified pastures: 49,595 ha, closely aligning with the FLR mixed grazing (>20 ha) category at 50,721.91 ha. Both datasets capture small rural landholders engaged in grazing, which has contributed to the significant increase in total livestock values (beef) noted in the Value of Production summary.
- Irrigated horticulture: 3,896 ha, used to estimate vegetable production value in the shire, as FLR data could not provide accurate area figures for this category.
- Dryland horticulture: 2,177 ha, encompassing orchards, vineyards, olives, citrus, stone fruit, and other niche enterprises identified through surveys and focus groups.
Intensive production: 1,266 ha, representing smaller land areas but generating significant output (e.g., poultry for breeding, meat, and eggs).
- Rural residential: Nearly 20% of rural land use across the shire. This group of small rural landholders presents opportunities for targeted outreach and education to improve land management practices. Engagement could also help verify small-lot production activities and associated income contributions below the ABS threshold of \$40,000 EVAO

Land use summary for Cardinia, Victoria

			Area (ha)	Share
Agricultural uses	Livestock production	Grazing modified pastures	49,595	38.67%
		Irrigated pastures	1,984	1.55%
		Intensive animal production	1,266	0.99%
	Cropping	Dryland cropping	332	0.26%
		Irrigated cropping	16	0.01%
	Horticulture	Dryland horticulture	2,177	1.70%
		Irrigated horticulture	3,896	3.04%
		Intensive horticulture production	267	0.21%
Non-agricultural uses	Nature conservation	Nature conservation	17,791	13.87%
		Managed resource protection	2,533	1.98%
		Other minimal use	4,495	3.50%
	Forests and plantations	Plantation forests	91	0.07%
	Intensive uses	Urban residential	8,615	6.72%
		Rural residential	24,816	19.35%
		Other intensive uses	8,014	6.25%
		Mining and waste	969	0.76%
	Water	Water	1,408	1.10%
Grand Total			128,262	100.00%

Survey Summary

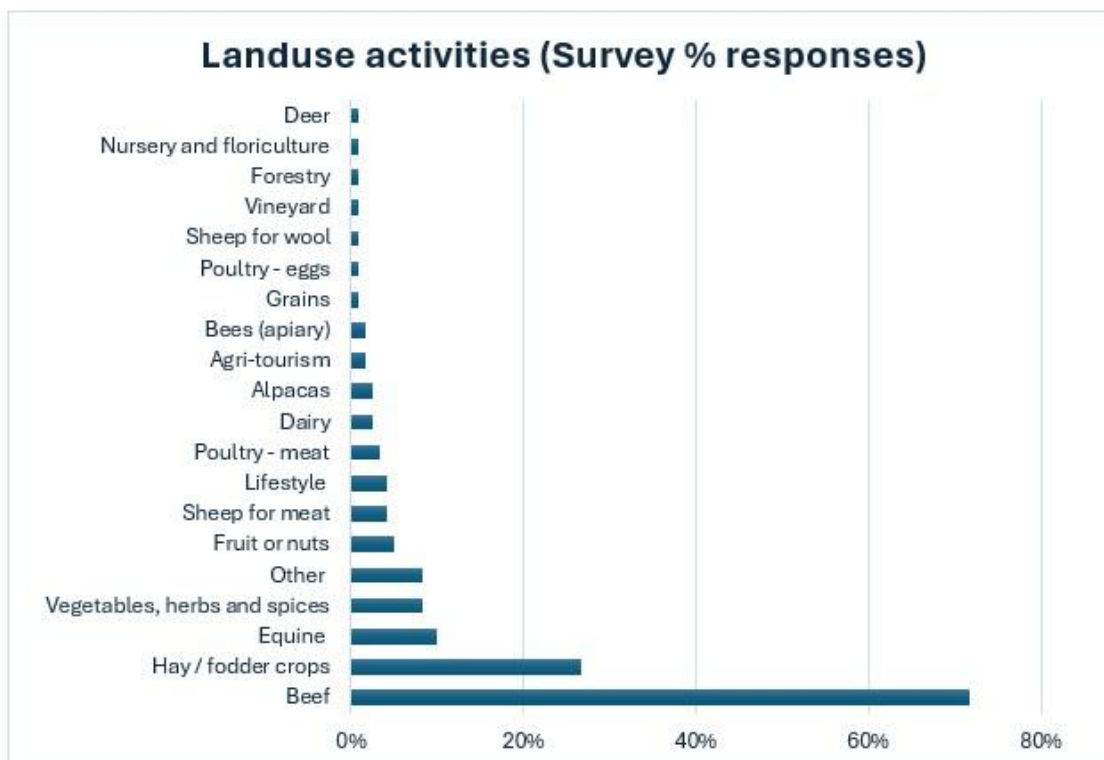
A total of 291 responses were received from individuals across the shire. These responses provide a snapshot of current agricultural activities and viewpoints.

The data serves as a verification tool alongside other sources, helping to confirm key trends in land use, production activities, and challenges faced by the agribusiness sector in Cardinia.

Survey feedback indicates that commodity production trends align closely with Farmland Rate (FLR) data. Larger-scale enterprises dominate the rural landscape, particularly beef, vegetables, fruit, poultry, and dairy.

Survey respondents:

A general summary of Land-use (production) activities undertaken by the survey participants:



The audit identified key realities, gaps, and opportunities influencing local agricultural production in Cardinia Shire. Findings highlight a diverse peri-urban landscape with high-value soils, strong reliance on smaller holdings, and pressures from urban expansion and land-use conflicts. Challenges include limited understanding of Council resources, fragmented pest and climate strategies, and inadequate infrastructure for diversification. Opportunities exist to strengthen policy, governance, and industry engagement through improved land stewardship, freight and logistics upgrades, procurement policies, and collaborative advisory mechanisms. These actions aim to enhance resilience, productivity, and economic viability for local agribusiness.

Stakeholder consultation

Case Study: Gembrook

Gembrook is known for its rich history of a thriving potato farming industry, incorporating multi-generational businesses and a rich indigenous red soil (Warragul/ferrosol).

However, Gembrook has experienced significant decline in commercial scale agricultural enterprises over the past 30 years. In particular, the potato industry, due to a combination of longstanding:

- Persistent organochlorine chemical residue levels (Dieldrin) remaining in these highly productive soils which limits enterprise type due to potential residue contamination in meat and vegetables
- Presence of Potato Cyst Nematode (PCN); a microscopic roundworm which causes significant decline in crop yields through root damage and poor water and nutrient uptake.

As part of this Audit, we visited the Gembrook community and held a community forum in 2024. These are some of the forum discussion themes:

- **Planning:** Clarification and better connections required with Council's planning teams.
- **Costs & Rating System:** Property rates and land tax causing significant frustration.
- **Green Wedge:** A clear, consistent and informed green wedge plan needed to be developed, informed by collaboration with neighbouring Councils and other relevant bodies.
- **Council Policies:** Current regulations limit small landholder initiatives. There is potential to improve farm gate sales and agritourism experiences.
- **Pests:** Feral animals (deer, rabbits, foxes), invasive weeds (blackberry, ivy, ragwort).

These themes have informed some of the Opportunities contained in this document.



Fertile Warragul/ferrosol soils

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Farming and Food Futures Workshops

Three workshops - one online and two in person – were held to gather insights from a diverse mix of stakeholders, including primary producers, small-scale farmers, service providers, and community representatives. These sessions provided a platform to discuss challenges, share experiences, and identify opportunities for Cardinia’s agribusiness sector.

Participants explored key themes such as:

- Doing business in Cardinia Shire
- Current farming practices and land-use activities
- Crop diversity and livestock management
- Sustainability initiatives and potential growth opportunities

Feedback highlighted common issues including planning complexities, infrastructure constraints, and the need for stronger advocacy and industry networks.

For detailed workshop feedback, refer to Appendix D.

Small rural landholders

Across Cardinia Shire, large-scale livestock enterprises (beef, dairy, poultry) and horticultural businesses dominate the landscape and are widely recognised as key contributors to rural economic development. Their production values are well documented in external datasets, including ABS, ABARES, and industry reports.

However, the Bunyip Complex Bushfires of 2019 highlighted the significant presence of smaller rural landholders often overlooked due to their limited scale, reliance on off-farm income, or non-agricultural business commitments. While many of these properties fall below the ABS production threshold of \$40,000, their collective contribution to the local food economy is substantial.

A review of Farmland Rate (FLR) data confirmed that mixed grazing systems cover extensive areas and generate meaningful income through livestock sales. These landholders also bring diverse knowledge, skills, and networks, adding entrepreneurial capacity and resilience to the local agricultural value chain. Their influence extends beyond production, supporting local consumer access points near high-density urban areas.

The Agricultural Audit incorporated a more accurate estimate of production value within mixed grazing categories. Feedback from these stakeholders revealed opportunities for future engagement and support, potentially shifting the “Don’t Know” category toward informed action.

Gross Value of Agricultural Production

Cardinia Shire’s agricultural sector contributes an estimated \$500 million annually at farmgate value, underscoring its scale and economic significance. The largest contributors include vegetables (\$90m), beef (\$84.3m), asparagus (\$63.1m), nursery/flowers/turf (\$60m), dairy (\$57.5m), poultry (\$26.15m), and eggs (\$28.8m). These figures highlight the region’s role as a major food-producing area within Victoria’s peri-urban food bowl.

Context: Value of Production

Estimating the Value of Production (Farmgate) provides a general acknowledgement that the sector is capable of diverse and significant productive capacity across the shire.

However, there are several important points to consider. Gross production (farmgate figures) does not reflect the actual costs of production/ha which include (but are not limited to):

General:

- Labour, fuel, insurance, energy, water, compliance, rates, levies, leases

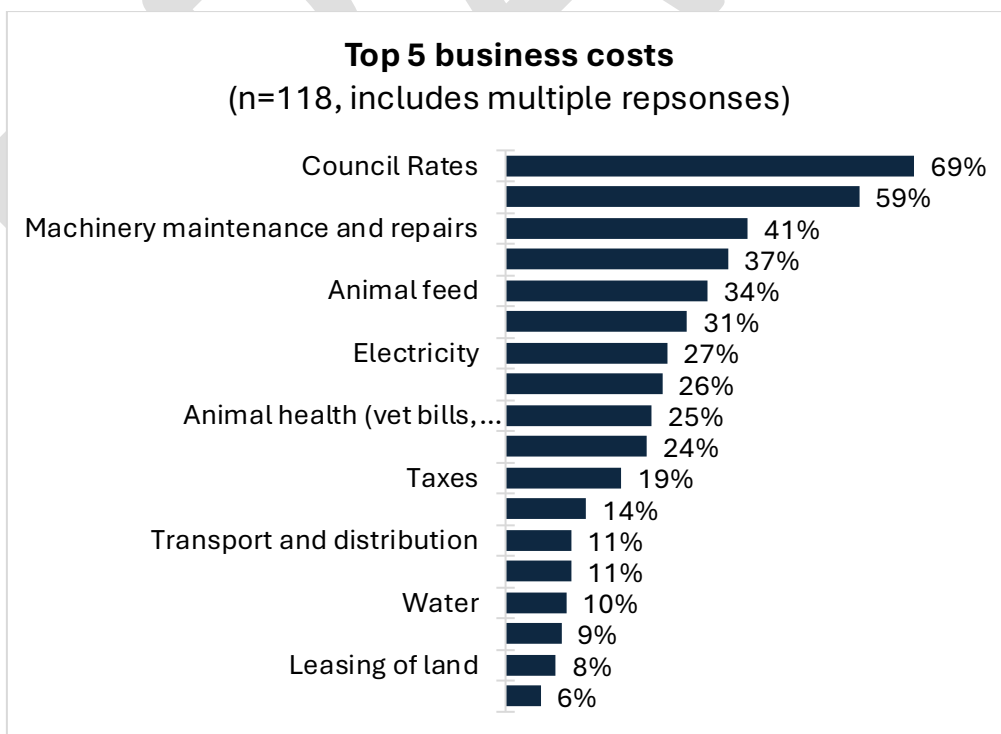
Crops:

- Planting, growing, inputs, harvest
- Irrigation, equipment
- Washing, pack-out, storage, distribution

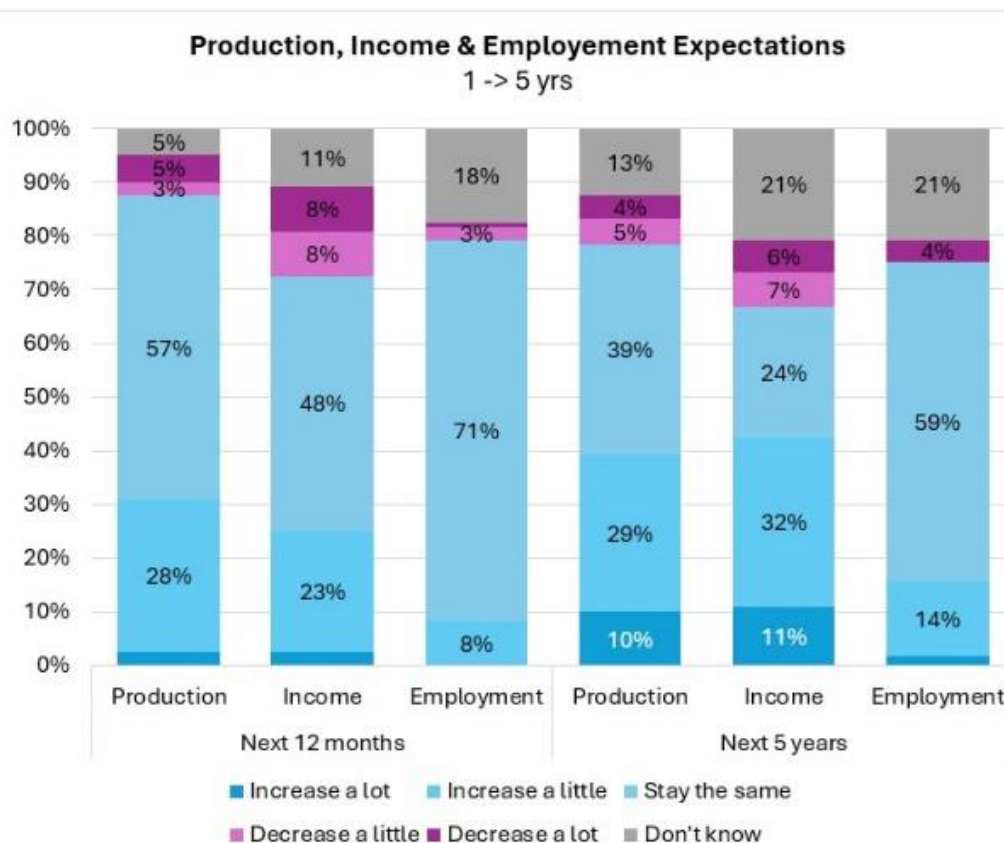
Livestock:

- Purchases
- Handling and marketing
- Livestock materials and veterinary chemicals
- Freight
- Administrative costs
- Fodder/feed supplements
- Finance costs
- Repairs and maintenance

For detailed commodity breakdowns and methodology, refer to Appendix F.



The survey provided participants an opportunity to highlight their top 5 business costs



Insights and Actions

The project identified a range of Opportunities for Action. These are priority issue areas, where Cardinia Shire Council leadership and allocation of supporting resources, can enable better planning for productive agricultural lands to support industry, innovation, local food economy, and local job growth in the region. The summary below has also been revised into a table with detailed actions (Pg. 44-50).

- **Agricultural/rural planning development officer:**
 - Management of all agriculture/farming planning applications
 - Creation of case studies on the planning application process (steps, zone considerations for permit success)
 - Coordinate internal training for council staff (in agriculture related activities and requirements)
 - Coordinate external training for the local agricultural industry (on the planning process/requirements),
 - Assessment of relevant Green Wedge legislation and relevant shire policies to better align with industry needs including potential for re-zone/excision flexibility for aging and retiring farmers, and supporting appropriate infrastructure requirements for long term industry viability
- **Agribusiness Forum:** Hold a forum that connects commodity group: Commodities, Water, Employment, Worker accommodation
- **Asset Mapping:** Local agricultural production, sales and distribution pathways: markets, infrastructure, facilities, feed mills, input stores, suppliers, cool rooms, warehouses

- **Calendar of events:** Networking and social events across rural communities: agribusiness focus
 - **Case studies:** Need to update the derived Value of Agricultural output and conduct a next stage of analysis. Work through case studies of each commodity, with more detailed analysis. Comprehensive, detailed Economic analysis project of agriculture, food manufacture, retail, exports and inputs for agribusiness.
 - **Data collection:** Organise future annual economic, production, employment, detailed farm type, data collection, update new fields via rates – linked with GIS to be able to produce for economic reporting on the industry. More concentrated and specific commodity sector cooperation
 - **Direct marketing:** Focus on promotion of locally produced commodities – e.g. development of a Regenerative farming brand / Certification mark to connect interested producers wanting to reflect their commitment to environmental stewardship and active carbon abatement; lamb and beef products to butchers and consumers (i.e. Meat Me at The Gate / Bacchus Beef)
 - **Farm land rates:** Enable all properties of any size or earning capacity or type of farming enterprise (i.e. contracted hay – producing 5 round bales) to get the Farmland Rate, provided they are keeping property weed free and/or maintaining/enhancing their biodiversity/natural capital (i.e. farm dam planting/shelter belts). Rates need to be fair and realistic to help retain property viability and cap at average farm rate paid across Victoria
 - **Farm succession:** identify and support farmers (aging / new farmers / farm sharing / leasing) program continue to support WGRA's Farmer & Small Business Mentoring Program, review and refine a consistent workshop program and broaden across the Shire. Analyse the options for farmers to excise land/houses and subdivide for retirement.
 - **Incentives:** provide for local businesses including meals on wheels, hospitals aged care facilities social welfare kitchens, retailers and hotels, cafes, restaurants – i.e. over 50 % local purchase per annum i.e. Incentives may include free or subsidised Environmental Health/Food Safety Audits, Fees or Rates reductions.
1. **Industry Advisory body:** Establish an Agriculture and Food Industry advisory body to council.
 2. **Industry Attraction:** define and set a new focus on Agriculture and Food Manufacture – Winery/Beverage/Milk – cheese / – Whole of Council focus on agriculture. – Council to set targets to increase Economic outputs, and employment in agriculture by 20% in the next 5 years!!!
- **Planning Governance:** Support connecting / advising applicants. Ag and business prioritised – new fast tracked green wedge planning/building permit process – Plan Vic/Ag Vic. supported.

- **Planning scheme analysis:** in relation to the GWZ and implications/impacts on Agritourism – associated needs such as accommodation or ability to sell local produce on one farm – a consolidated hub (not just sourcing from an adjacent property).
- **Procurement:** Review the Cardinia Shire Council local procurement policy i.e. stipulating % purchase preference for locally produced products (e.g. milk, fruit, vegetables, meats) in catering contracts
- **Regenerative farming:** facilitate farmer discussion group activities to assess application of relevant land capability technologies, demonstration sites and continued support for WPGA's regenerative farming program. Demonstration and workshop series of Regenerative Farming, facilitated by WPGA, to be designed and supported (in association with Mornington Peninsula and Yarra Ranges)
- **Research and Development:** Engage the agricultural industry and universities to assess and research trial solutions for agricultural alternatives to current water/soil issues including ground water soil salinity, dieldrin contamination and potato cyst nematode. Partner with local farmers and scientists and develop trial sites with local farmers for a range of alternative activities.
- **Wholesale Distribution:** Establish a large multi-purpose wholesale direct distribution centre market in new Officer South industrial precinct.

Summary: Opportunities for Action

Targets below have been mapped (in brackets) to the *Audit Opportunities* identified on page seven of this document.

Target	Gaps & Opportunities	Notes, Feed Back & Actions
Cardinia Shire: Food Bowl Identity (1.4, 5.1, 5.2)	Gap: Limited strategic awareness of Cardinia Shire food bowl contributions and impacts on local food security <i>Food producers are not respected or valued</i> Raise broader awareness around Cardinia's Food Bowl contributions to the wider community	• Development of a local food strategy linked to Provan and identity • Broader promotion of production, innovation, diversity, scale and distribution <i>Bring the council out to the agriculture – get an advisory committee up and running- get out of your suits and into your boots</i>
Agribusiness Commodity Working Group (2.1, 3.1, 3.4)	Gap: No formal connection between council and rural community (commodity groups) • Review of draft audit findings (local commodity technical and economic status) with industry representatives to check for further refinement and prior to final submission to council • Establishment of a permanent and representative agri-business advisory committee to council to provide timely feedback and guidance on industry wide issues, policy feedback and	• Identify local commodity representatives to participate in these activities on behalf of the broader industry stakeholders • Refine concerns and develop actionable solutions to alleviate impacts planning for farming and agritourism, water, labour, worker / customer accommodation, transport links, road and drainage issues etc.
Agribusiness Officer (2.2, 6.1, 6.2)	Gap: Full time rural economy focused role • Dedicated officer to focus on rural community land-use activities (Economy, Networking) across the shire	• Appointment of a full-time council officer role dedicated to supporting rural community land-use activities (Economy, Networking) • Advocate and champion on behalf of Cardinia Food Bowl • Link with other peri-urban councils to strengthen food secure identity, integrated supply and distribution pathways, link to consumer purchasing interface

Rural Land Use Planning support (1.1, 1.2, 1.3, 1.5, 2.1, 3.2, 4.1, 4.4)	Gaps: Lack of Rural Land-use planning support service (Officer) to navigate Green Wedge Zone rules for use and buildings Tensions between Urban Growth demands and Agricultural land use (especially on the edge of townships) Urban focus prioritised over rural area (perception)	- Allocation of a dedicated Rural land-use planner to fast track and guide agribusiness applications through the process, - Provide advocacy link between on-ground issues and council operational units; first point of contact for farmer engagement to identify appropriate internal contact points; build relationships with the rural community through informal meetings, discussion on rural land use matters																		
Farm Land Rate Database (1.4, 2.2, 4.2, 4.3, 6.1)	Gaps: broad FLR categories limit land-use data analysis Review of current FLR land-use descriptors to improve the accuracy of verifying commodity types and area (ha). This will improve the annual level of understanding of FLR activities and enable land-use data to provide accurate baseline information for reporting, advocacy and commodity verifications purposes	Liaise with Council Rates department to review current criteria for FLR commodity information capture; and identify where data sub-categories may be revised to capture more detailed land-use information on specific commodity activity																		
Niche production systems (3.3, 4.2, 5.1, 5.2, 6.1, 6.3)	Gap identified: No local boutique farming demand realised Exploration of alternative high value niche crops, livestock and aquaculture (land-use management); focusing on production on smaller lot holdings: Potential for targeted expansion on small lot holdings: (Lifestyle < 20ha) <table><tr><td>Niche fruits</td><td>Niche vegetables</td></tr><tr><td>Mushrooms</td><td>Commercial Vegetables</td></tr><tr><td>Commercial Fruits (Citrus, Pomme)</td><td>Hemp</td></tr><tr><td>Botanicals</td><td>Herbs & Spices</td></tr><tr><td>Berries</td><td>Avocados</td></tr><tr><td>Olives</td><td>Aquaculture</td></tr><tr><td>Farmed game</td><td>Alternative poultry</td></tr><tr><td>Nuts</td><td>Truffles</td></tr><tr><td>Medicinal Plants</td><td>Essential Oils</td></tr></table>	Niche fruits	Niche vegetables	Mushrooms	Commercial Vegetables	Commercial Fruits (Citrus, Pomme)	Hemp	Botanicals	Herbs & Spices	Berries	Avocados	Olives	Aquaculture	Farmed game	Alternative poultry	Nuts	Truffles	Medicinal Plants	Essential Oils	Niche enterprises review: Filter out smaller lot holdings to focus on gathering information on: What do you grow and where does it go? What would you like to grow and where would it go? Case studies: Develop to identify new opportunities for expansion or introduction of higher value, more intensive production systems or niche alternatives; especially on smaller lot size where soil type, growing conditions and climate attributes are suited. Scale of production: Identify enterprise size required to sustain appropriate local industry infrastructure and logistics. Landscape health:
Niche fruits	Niche vegetables																			
Mushrooms	Commercial Vegetables																			
Commercial Fruits (Citrus, Pomme)	Hemp																			
Botanicals	Herbs & Spices																			
Berries	Avocados																			
Olives	Aquaculture																			
Farmed game	Alternative poultry																			
Nuts	Truffles																			
Medicinal Plants	Essential Oils																			

		Use of Break crops for soil remediation (Hemp in contaminated landscapes – Northern shire) Repurpose of existing infrastructure to support value addition of raw materials (e.g. processing of fibre crops)
Rural Landholder Learning Network (3.1, 3.3, 4.4, 6.1, 6.2)	Gap: Significant number of small rural land holdings who miss out on engagement in technical learning networks and activities Promote productive land use management strategies targeting small lot size landholders (small scale agriculture, new and lifestyle owners) where there is limited knowledge of agricultural and natural resource management technical concepts and implementation methods	Link to local sustainable agricultural network and promote networking and learning activities Key areas for initial focus include soil fertility, water use efficiency, integrated weed & pest control, use of multi-species pastures, animal health & welfare, land-use planning
Commodity Marketing Consolidation (1.3, 2.1, 3.1, 4.2, 5.1)	Gap: Small herd sizes across the shire (predominate on small lot holdings) Potential for greater volume direct to local abattoirs for processing Create quality & production specifications that build nice market access for a group of producers Consider use of agistment on vacant shire land for additional grazing capacity	Identify beef or Sheep producers that are interested in exploring options for developing a local, network beef alliance or brand Engage WPGA leadership to explore potential brand identity attributes/accreditations i.e. grass fed, organic, resource/natural asset positive, regenerative Coordinate with local butchers to align market specifications Development of marketing plan (Scope, Brand, Quality Specifications, Markets, Customers)
Fodder Quality (3.3, 4.2, 4.3, 6.1)	Gap: Quality, Type and Quantity of fodder production Substantial levels of production of hay and silage fodder crops are grown across properties in the shire Target specific quality attributes & feed types that better align with local equine industry animal rations Strengthen supply links with the local regional equine industry and produce high value small square bales as import replacement (lucerne etc.)	Undertake and document a more comprehensive audit of fodder produced for on-farm use vs external sale opportunities within the shire. Assess fodder quality standards to set nutritional parameters that meet lucrative local markets (equine, stud breeding, dairy). Liaise with the local Equine community (recreational, breeding) to identify industry requirements: dietary/quality that can replace a proportion of brought in fodder, grain and mixed feed rations.

Poultry expansion (1.1/1.2, 1.3, 2.1, 4.1/4.3, 6.1)	Gap: Restrictions on capacity to expand batch numbers/shed due to the lack of alignment between Planning scheme and Broiler Code Region has potential to expand annual Broiler production capacity due to proximity to local processors, feed mills and labour force. Adjustment of number of birds per square meter to align with Broiler Code and enable expansion of industry within existing sheds	Undertake a review of current Shire Planning regulations and the Broiler Code, to enable industry expansion and flexibility planning options to shift to free range enterprises. Review of Permit process for expansion of shed facility holding to 21.5 per m2 (Broiler code). Investment attraction. Work with key processors and feed manufactures suppliers to secure further appropriate infrastructure for the industry.
Horticulture (1.1/1.2, 1.5, 4.2, 4.4, 5.1, 6.1/6.3)	Gap: Restricted ability to scale up commodity outputs due to land prices, land sales and short-term lease arrangements, affordable water security Explore the potential to increase industry expansion in terms of production, retailing, distribution and exporting Support industry to investigate opportunities to create a market for graded product and divert into value added food production streams Build local food systems and balance food exports with local needs. Promoting local produce markets and implementing policies that favour local food production and distribution. Wholesale Distribution: Establish a large multi-purpose wholesale direct distribution centre market in new Officer South industrial precinct	Link with Industry to identify collaborative partnerships for areas identified: transport, distribution, zoning, water Support awareness raising and linking producers to consumers Cardinia Fresh: linked to provenance and food bowl identity Support permit application discussions for value addition upgrades and on-farm structural; improvements (infrastructure, investment attraction) Support industry to investigate longer term secure water access options (price & volume) which will enable diversification into a range of high value commercial crops Develop case studies to identify new opportunities for expansion or introduction of higher value, more intensive alternatives Higher value crops with more potential viability for expansion, where soils/climate are ideal (i.e. broccoli, lettuce, cauliflower, kale, silver

		beat, Asian vegetables. herbs, leafy bunched vegetables, snow peas, and mushrooms).
Wine grapes (3.1, 4.2, 5.1, 6.1)	Gap: Understanding of industry expansion: variety and scale Explore the potential to increase industry expansion in terms of production, retailing and exporting	Engage with specific wine industry businesses and develop an advisory group with interested landowners Investors engaged to explore further development of the wine industry. Case studies developed, and partner with cool climate wine industry to showcase the region
Food consolidation manufacture and distribution (1.3, 4.1, 5.1, 5.2)	Gap: Limited opportunities for small to medium producers to supply local food processing customers for value addition and on-sale Strong value adding already in large scale commercial businesses: Vegetable growers: Grading, washing, packing, and processing/value adding produce (domestic and export markets) Vegetables, potatoes, asparagus, olives being pickled, processed and packaged sauces, oils and dips. Dairy: Milk, cheese and other products including organic. Beef/Lamb/Chicken: Farmgate and local, self-branded fresh, frozen and dried meats. Wineries – a dozen producing/bottling other grapes. Teas (including botanicals/spices) dried and packaged. Orchardists: Juicing, ciders, chutneys and jams. Asparagus: 30% waste in asparagus	Review Food Processing survey data for development of a more comprehensive engagement of smaller businesses to understand current and potential demand, produce types, distribution pathways, procurement options, quality specifications, end products Asset Mapping: Prepare a detailed supply chain map to promote off farm movement of local agricultural production including sale points and distribution pathways: markets, infrastructure, facilities, feed mills, input stores, suppliers, cool rooms, warehouses Investment attraction plan for food packing, processing, distributing/logistics, manufacture businesses, capitalising on existing businesses and infrastructure first.
Farming & Food Network (3.1, 3.2, 4.1, 5.1)	Gap: Lack of awareness of diverse food products and accessibility within 100km of capital cities Connecting farms/commodities to direct opportunities with manufactures, institutes, hospitals, welfare and aged care facilities, and Council. Increase the percentage of food products procured direct from major regional Melbourne buyers.	Facilitate Farming and Food Networking events: Highlight distinct fruit, vegetable, meat, dairy, eggs, herbs, spices, condiments etc Promote “100 km Peri urban” food security. Explore the demand for ongoing food and farming events as a prelude to investigation of regional distribution/fresh produce hub.

		Calendar of events: Networking and social events across rural communities
Agritourism (1.2, 3.1, 5.1, 6.1)	Gap: Understanding and support expansion of this sector Capitalise on established industry associations, to support and deliver agritourism activities that support Council plans and strategies.	Assist in committees, partnership development and funding applications to grow food, nature based and educational tourism experiences. Develop 'Hero' case studies and strengthen network initiatives
Financial Counselling (4.3, 6.1, 6.2)	Gap: Significant financial pressure on farmers Opportunity to facilitate an active wellness engagement program for farmers and landowners facing financial or other stressful issues.	Engage with Rural Financial Counselling Service, government and philanthropists and other local support services to fund, develop and support farmers in need to progress out of difficult situations.
Underutilised Land (1.1, 1.2, 3.3, 4.1/4.3)	Gap: Extensive areas of dormant/underutilised land throughout the shire Opportunity to engage with landholders on properties where underutilised and connect stakeholders interested in investment and appropriate development	Run workshops and facilitate farming development and networking, opportunities to connect farmers with landowners who are interested in leasing or joint partnerships.
Grant Opportunities (2.2, 4.3, 5.2, 6.1/6.3)	Gap: Limited resources to complete key management and implementation activities of mutual benefit to council and rural landholders Food Provenance: Local food strategy development Food Manufacturing: Gaps analysis on stakeholder needs to improve local, stable sourcing pathways and processing efficiencies Pest management Control: limited Peri-urban economic strengthening Rural landholders: education, up skilling	Identify relevant and timely grants, funding, investment attraction to support: Landholder capacity building activities through enables technical information exchange Small Business development: Planning guidance and understanding of zones, permits and the application process Food processing expansion: investment, upgrades, innovation Pest control: Efficient use of resources for effective implementation of initiatives
Secondary/tertiary businesses (3.1, 4.1, 5.1, 6.1)	Gap: Lack of ability for primary expansion due to land size, cost and planning zone restrictions Understand food processing sector: needs and gaps in terms of location, zoning, raw product access	A food processing Gaps Analysis to be undertaken to identify land, infrastructure, facility upgrades that would support value addition Link to Cardinia Shire Provenance identity (promote shorter value chains and informed purchasing) Secondary processing for lower quality grade produces for bottling, juicing, canned, pre-prepared, condiments

Equine Industry (1.1/1.2, 3.1, 4.3, 6.1)	Gap: Quantification of Equine industry contributions to the economy (not covered in the Agricultural audit)	Undertake a separate Equine Industry audit to better understand activities, contributions and overall value to the shire economy
Organic and Regenerative Certifications (3.3, 4.2, 5.1, 5.2, 6.1)	AS 6000: Organic and biodynamic products is an Australian Standard published by Standards Australia. National Standard for Organic & Bio-Dynamic Produce is a Commonwealth document used under export control law Regenerative Organic Certification by the Regenerative Organic Alliance	Domestic standard for selling into domestic wholesale/retail (e.g. Coles/Woolworths, independents, farmers' markets). For export products labelled "organic" or "biodynamic", certified by DAFF-accredited organic certifier (ACO, SXC, BDRI/Demeter etc.). Best for brand-conscious, heavily export-oriented producers

CONCLUSIONS

Agricultural production accounts for an estimated \$500 million output per annum. This figure is reflective of diversity and scale of seasonal production systems, with the shire fortunate to have a range of highly productive soils suited to various types of cropping and livestock activities. Favourable seasonal growing conditions generate high-quality seasonal produce, while sustainable grazing practices protect soil assets and maintain adequate groundcover. The sector is an important feature in this peri-urban landscape's functionality.

The subsequent economic flow-on support to small businesses, rural contractors, packhouses, processors, freight and logistic providers is also substantial; however not quantified in the scope of the audit project. Further investigation into quantifying these matters and their significance to our economy could be an item for a Cardinia Shire Food and Agribusiness Advisory Committee to consider. Furthermore, discussions with industry, universities and other experts (including those with lived experience) could be facilitated to unpack the issues.

Value of quantitative data and information

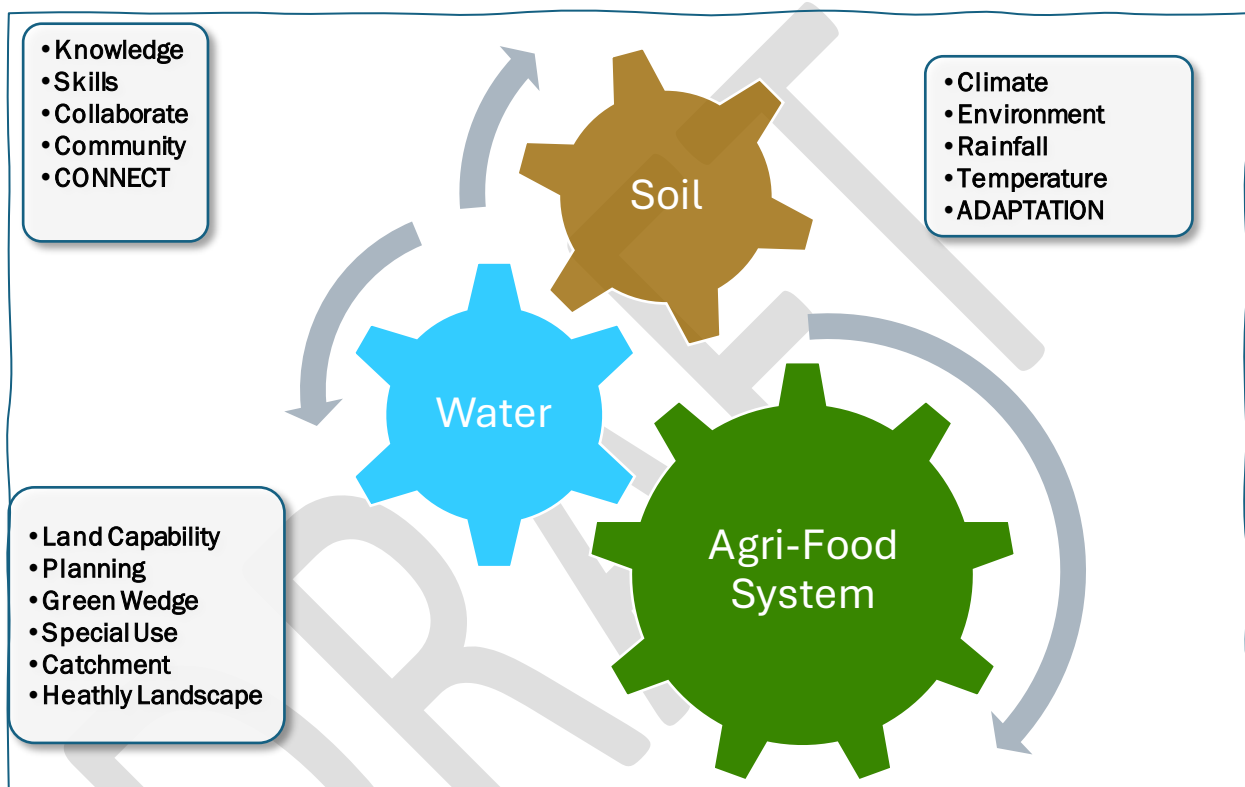
Gross production values are estimates of productivity, NOT profitability. The report provides insight and understanding of the sector for benefit of council, industry and community. Stakeholder feedback captured may inform and influence as follows:

- Council Policies: used in decision making through reference to data that reflects on-ground activities, challenges, gaps and solutions
- Internal use by Shire units: Land-use planning, Health and Community, Economic Development, Environment, Tourism to inform current strategies and on-ground outreach
- Community and industry benefit: General insight into production activities (scale and diversity)
- Provides a baseline for activity scale to be measured (future)
- Use to raise awareness of the type of production and land-use activities undertaken across the shire with external stakeholders
- Use for advocacy purposes to seek government funding, attract private investment
- Profiles the region and its contributions to the broader peri-urban food bowl identity
- Reinforces the elements that underpin and maintain a resilient food system through **INTEGRATION** and implementation as described below

Integrated Food System approach

- **Land Use Planning:** Implement robust land use planning with limits placed on rural land development and transfer demand diverted to regional settlements
- **Support Local Farmers:** Provide support to local farmers through various means such as grants, training, and land management resources.
- **Promote Sustainable Farming Practices:** Encourage the use of sustainable farming practices and technologies. i.e. Primary Production Adaptation Action Plan in Victoria supports sustainable land management and farm planning services

- **Strengthen Local Food Systems:** Build local food systems and balance food exports with local needs. Promoting local produce markets and implementing policies that favour local food production and distribution
- **Educate and Engage the Community:** Enhance awareness about the importance of local agriculture and its role in the economy. This can be done through educational programs, community engagement initiatives, and public consultations
- **Collaboration and Connection:** Build collaboration and connection within the food system. Partnerships between farmers, food businesses, and local government, and promoting regional cooperation.



Appendix A: Project Methodology

Stage	Activities	Who	Outcomes
Data Collection and Research	- Identify key stakeholder segments / organisations - Literature review of past work conducted in region - Cardinia policies and programs - Economic / Land use data (including farmland database statistics). - Review general issues - Develop approach, key research questions, evaluation framework and survey themes and questions - State, national and international references / case studies	Cardinia Shire Project Working Group Industry representatives	- Identify issues, challenges, risks, opportunities. - Interview and survey questions for initial and concentrated consultation to gather further information/fill identified information gaps for determining: - the value and quantity of production (GDP, volumes) - types of agriculture, area farmed, products raised or grown - value of agriculture to the local, regional, and state economy - sales and markets for produce – local, regional, intra / interstate and export - key stakeholders and networks - asset mapping – land use, key assets (physical and organisations), underutilized assets / land - opportunities for increasing resilience, adaptation, value adding, sales, local marketing and agritourism, food systems infrastructure.
Stakeholder Consultation (Initial)	- Online survey (x 3 part) Farming / Agriculture and Food Businesses / Processors / General - Questionnaires / semi-structured Interviews	Local farms and agri-food industry stakeholders, businesses and associated organisations	- Identify priority stakeholders/influencers. - Explore local assets, issues, potential opportunities
Stakeholder Consultation (Concentrated)	- Workshops X 3 1 x Online and 2 x Face: Face	Local farms and agri-food industry stakeholders, businesses and associated organisations	- Strengths, Issues, Opportunities - Explore issues / priorities /roles and contributions for Action Plan options - Refine ideas, structure and priorities then identify issues and concepts for Action Plan - Draft Report and Action Plan
Audit Report and Action	Draft Action Plan consultation-Report and Recommendations and Actions for Public feedback	Industry -Community, Council	- Confirm commitments, influence, purpose - Agreement and Final Action Plan revisions - Formulate recommendations for future action - Report and Action Plan finalized and submitted formally to council

Appendix B: Audit link to Strategies and Plans

The audit directly supports Cardinia Shire Council Plan (2025–2029), strategy 4.8:

“Deliver the 2025 Agribusiness Audit, using its findings to inform the development of a Food and Agribusiness Strategy and guide the implementation of strategic actions to strengthen the sector.”

It also strongly aligns with the Cardinia Shire Food Strategy (2018–2026), which outlines five strategies for achieving a healthy, sustainable, and fair food system. These include protecting fertile land, growing a vibrant local food economy, enhancing food knowledge, reducing waste, and building community capacity.

Without a comprehensive understanding of the current state of agribusiness—including baseline data and identified issues and opportunities—these strategic objectives cannot be fully realised or implemented.

Strategy 1:	Strategy 2:	Strategy 3:	Strategy 4:	Strategy 5:
Protecting and utilising fertile land as a source of fresh food for current and future generations.	Growing a vibrant local food economy which supports growers and enables people to access affordable, local and healthy food.	Enhancing food knowledge, skills and culture within schools, workplaces, clubs and the wider community.	Reducing and diverting food waste from landfill and reusing water to grow food.	Building capacity across the community to lead, participate in and support work on food systems.

The Audit provides comprehensive baseline information, underpinning the Regional Agricultural and Food Production Strategy Project of the Economic Development Strategy (2023-2027) initiative: “Facilitate better planning for our agricultural land to support industry, innovation, local food economy and local job growth”.

Project:	Objective:	Key goals:	Actions / 2027 milestones:
Regional Agricultural and Food Production Strategy	Partner with strategic planning to further protect agricultural land from urban development.	Creating an integrated food strategy that creates primary production locally and secondary value-adding production within the region. I.e. Reduced food miles, protect agricultural land, create a region of providence.	Secure funding to engage with a consultant to complete an agricultural food strategy.

Other Strategies and Plans:

The Audit will inform and consider other related local plans and strategies including: The Cardinia Biodiversity Conservation Strategy (2019–29), the Integrated Water Management Plan (2015-25) and the three associated Westernport (2017), Southern Ranges, Yarra Valley and Yarra and Dandenong Ranges, Green Wedge Management Plans.

Appendix C: Employment Data

In 2022/23, the Cardinia Agriculture, Forestry and Fishing Industry was reported to employ a total of 1,835 people (1,726 FTE), comprising of 1,571 (1,469 FTE) in Agriculture, 223 (215) in Forestry and Logging, 23 (19) in AF&F Support Services, and 18 (14) Aquaculture

		2022/23		2017/18			
Economic measure	Cardinia Shire	Victoria	% of Victoria	Cardinia Shire	Victoria	% of Victoria	change
Cardinia Shire – All (Agriculture, Forestry Aquaculture Forestry, Logging & Support Services)							
Employment (total)	1,835	73,687	2.5%	1,843	91,977	2.0%	-7
Employment (FTE)	1,726	72,019	2.4%	1,832	97,792	1.9%	-105
FTE to total employment ratio	0.94	0.98	0%	0.99	1.06	0%	-0.05
Cardinia Shire - Agriculture							
Employment (total)	1,571	63,164	2.5%	1,616	80,313	2.0%	-45
Employment (FTE)	1,469	62,277	2.4%	1,571	86,638	1.8%	-103
FTE to total employment ratio	0.93	0.99	0%	0.97	1.08	0%	-0.04
Cardinia Shire - Aquaculture							
Employment (total)	18	332	5.4%	59	1,114	5.3%	-41
Employment (FTE)	14	284	4.9%	96	951	10.1%	-82
FTE to total employment ratio	0.77	0.86	0%	1.62	0.85	0%	-0.85
Cardinia Shire - Forestry and Logging							
Employment (total)	223	7,375	3.0%	148	7,357	2.0%	+75
Employment (FTE)	225	7,367	3.1%	150	7,330	2.0%	+76
FTE to total employment ratio	1.01	1.00	0%	1.01	1.00	0%	+0.00
Cardinia Shire - Agriculture, Forestry and Fishing Support Services							
Employment (total)	23	1,982	1.2%	15	1,994	0.7%	+8
Employment (FTE)	19	1,647	1.1%	10	1,993	0.5%	+9
FTE to total employment ratio	0.81	0.83	0%	0.67	1.00	0%	+0.14

Source: National Institute of Economic and Industry Research (NIEIR) ©2024. Compiled and presented in economy.id by.id (informed decisions). Data is based on a 2020/21 price base for all years. NIEIR-ID data is inflation adjusted each year to allow direct comparison, and annual data releases adjust previous years' figures to a new base year.

Appendix D: Survey Feedback General Trends

Questions	Survey Responses (%)
1. Are there any activities on your property designed to generate income?	40%: Earn some level of income from their land
6. How long have you owned / managed the property	52%: > 20 yrs, 15%: 1-4 yrs
7. What types of commercial agricultural production occur on the property	72%: Beef 27%: Hay & Fodder crops 8% - Vegetables
15. Where do you sell the produce from your property	31% - Wholesale 21% - Local shire 11% - Export
16. Are you considering increasing the proportion of your products that you export	11%: increase in export
18. Do you undertake any pre-sale processing (either on-farm or at premises you own) to increase the value of your product	72%: sell raw product
19. Are you an organic producer	Yes: 3%
20a. Do you have any other accreditations or follow any industry standards	47%: MSA 42%: Animal Welfare 3%: Organic
23 a. Do you work full-time or part-time on your farm	37%: Full time 42%: Part time work
23 b. Do you have another paid job in addition to working on your farm	51%: undertake paid work (off farm)
26. Do you employ seasonal casual workers	11%: Employ workers
31. What are your top 5 business costs (for the agricultural production operating in Cardinia Shire)	1. Rates 2. Insurance 3. Machinery 4. Livestock 5. Inputs (Feed, Fert, Chem)

32. Thinking about all of your agricultural business costs, overall, how much would be sourced from local businesses operating in Cardinia Shire	25%: Source all business-related expenses within Shire 39%: Source mostly in the shire
33. How do you source water for use for your agricultural business in Cardinia Shire?	42%: Tank water (on site) 36%: Bore 26%: Catchment (river, creek, drain) 25%: Town (potable) 6%: Recycled water
34. Do you have plans to expand your agriculture business?	67%: No plans to expand business
37. What limits business expansion?	46%: Increase costs to run business
38a. Do you have a strategic plan for your agriculture business	53%: No strategic plan for business 34%: Strategic plan (focus on 4 -5 yrs)
39a. What is your succession plan for the business / property	35%: Plan to sell land 34%: Plan to retain for next generation
40. What are the benefits / advantages of operating an agriculture business in Cardinia Shire?	30% - Climate (rainfall & temperature) 24% Soils (fertility and diversity)
42. What can be done to improve agriculture production and output in Cardinia Shire?	Roads: need improvement UGB: Better managed Drainage: need improvements Grants: promote availability
44. External threats to business viability	49%: Insurance costs 48%: Urban growth expansion 42%: Increasing land prices 27%: Equipment costs 24%: Pest incursions

45. Is there anything you would like to start doing / do more of on your property in the next 5 years?

23%: Improve infrastructure
18%: Increase in production
16%: Improve pest control programs

46. What, if anything, is stopping you from doing these things?

36%: Council policies
33%: State government policies
27%: Zoning use restrictions
18%: Federal government policies

47. What pests do you need to control?

91%: Blackberry control important
74%: Foxes
71 %: Weeds

50. How do you prefer to find out about the latest knowledge in your industry?

53%: Field days
38%: Neighbours / local farmers
44%: Industry information
31%: Industry events
23%: Social media

Appendix E: Survey response facts, realities, gaps, and opportunities

Facts: Living & working in Cardinia Shire

- Cardinia shire is a Peri-urban landscape with diverse land use
- Highly productive soils; grows a range of crops, vegetables, fruits, pasture, livestock, fodder, dairy
- Significant number of small rural landholders: tend to focus on grazing, livestock (Beef), fodder, equine activities
- Diverse education levels, knowledge and skills of landholders
- Significant reliance on off-farm income for smaller holdings to support agribusiness ventures (grazing, small crops, vines)
- High production levels of improved pasture, fodder
- Underutilized grazing lands throughout the shire (especially where smaller grazing enterprises)
- Water: high demand for seasonal production
- Rural roads: increased usage and traffic congestion
- Proximity to large urban communities for sale of local produce
- Food security: significant contributions from shire
- High level of Industry accreditation to Quality Management Systems (Livestock - MSA)
- People value networking and learning activities (field days, technical knowledge and skill building) through industry support

Realities Living & working in Cardinia Shire

- Inability for expansion of agricultural production/ land acquisition to increase holdings
- Limited opportunities for smaller holdings to diversification
- Land prices: limit (unaffordable) expansion
- Urban development (sprawl) encroaching on productive farmland
- Increasing cost of insurances, fuel, rates vs profitable land capability with traditional grazing systems
- Permit process: interactions with council planning section are frustrating; especially for structures improvements, upscale or value addition
- Negative attitude towards all tiers of government - (Themes - Roads, Rates, Policy, Taxes, Pest control, Water access)
- Council needs to value the rural lands contributions (collective scale) – focused on urban development priorities
- Rates – do not feel there is value for money that supports rural landholders
- Land is rated on value but does not consider zone restrictions and limited /prohibited economic activities - e.g. Activities allowed within the GWZ
- Lack of local wholesale market/distribution centre
- Raw products – transported from the shire for processing/value addition elsewhere
- Relocation of VLE reflects attitude of policy makers
- Water: flooding impacts from substandard drainage

Gaps: Living & working in Cardinia Shire

- Limited understanding of Council resources and support for landholders – general lack of awareness
- Pest plant animal efforts are fragmented/disjointed across the shire
- High value niche crop/product – emerging trends, smaller holdings to grow (spices, botanicals) – lack of local processing / value addition
- Agri-tourism ventures that align with permitted uses in zones
- Recognition that value addition is key to economic success
- General disconnect between Council and community – External/ Internal interface –
- Permit process – lack of understanding and support to guide landholders on correct interpretation
- Whole of Shire – Food/ Provenance Strategy, Brand, Production/Processing/Packaging/Provenance
- Food Security – awareness of contributions to metro zone
- Advocacy – voice of relevant areas/matters of state / federal significance – food security, local food access/ pest management, climate resilience, income and employment
- Production Map – overlay / landscape capability
- Visual maps of Production, Networks, Project zones NRM, Biodiversity)
- Lack of \$ allocation for landholder supported activities – Pest, Soil, Climate, Capacity building focus – economic strengthening & business support

Opportunities Living & working in Cardinia Shire

- Support from Council – Facilitate capacity building – networks and connections within and across communities on rural based issues – technical land management
- Advocate on behalf of agribusiness for investment attraction (Logistics, Processing, Packaging, Procurement)
- Raise awareness of council industry support services – Eco Dev
- Steering committee – Rural land-use connection to Council Planning/ Executive team – community leader representation – VFF, CWA, NGO's
- Promote Agribusiness – presence and value in the landscape through appointment of a dedicated Agribusiness Officer (focus on 70% rural landscape – Planning, Landscape Health, Food secure, market promotion/ Business and investment attraction – foster collaboration, income and local employment
- Facilitate community learning network – Agribusiness forums
- Rural stakeholder IDO working groups – Chicken meat, Vegetables, Livestock – meet with Rural Planners to understand Industry codes of practice – Zone interpretations, permitted uses _ Operational focus
- Streamlined easy to understand rural planning & permit application processes
- Dedicated Food Processing zone (raw materials stay in region or transported from Gippsland for value addition, package and dispatch
- Leverage funding/grant initiatives – Federal government, industry and NRM bodies

PRODUCTION**FACTS**

- Diverse soil qualities with high productivity
- Extensive areas of dormant/underutilised land throughout the shire
- Chemical residues remain in parts of the landscape
- High levels of production – chicken, asparagus, dairy, vegetables
- 90 % of Asparagus grown in the swamp
- Food producers are not respected or valued
- Can be separated into up to 7 distinct areas
- Flat black / swamp
- Proximity to Melbourne
- Economies of scale not here: need premium for products to be viable

GAPS

- No local boutique farming demand – why not?
- Looking for markets – sell into Melbourne (Epping) as there are no local market and a lack of Farm gate stores
- Farmers markets shortfall – local market produced but pitched to the correct demographic
- Horse and equine industries are surrounding us and contribute a lot to the economy: demand to purchase high quality fodder
- Rates paid are not evenly disbursed back to support the rural industry development
- Shire seems to deal with issues within the UGB not the rural areas
- 40ha automatic/ GWZ 1 or GWZ 2 does not fit
- Focus on Income vs Economic activity rather than land size
- Food bowl to community - there needs to be a higher value placed on produce
- A lack of advocacy to support local produce over imported foods
- Significant number of part time farmers (<20 hours a week)
- Lack of processing plant locally

REALITIES

- Good at growing anything – but need to build markets to sell
- Land costs - Intensive farming for bigger returns
- High density estates vs ag land development priorities
- Urban Speculation gives uncertainty
- Expansion can lead to issues – retain sediment and nutrients on farm
- Complaints on odour, dust
- Ag and extractions can be competing
- Products into Distribution Centres is a challenge
- Leasing land: too many obstacles to lease land i.e. no water, fences everywhere, weed issues
- Length of time for infrastructure permits – 3-4 years

OPPORTUNITIES

- SE Water business case approval out of Catani and Cora Lynn – Class A \$1200/meg at Tyabb
- Expansions create the need for permits to be advertised and they should not require a permit notice
- Need council to support processing hubs – primary/secondary businesses
- Hygain to buy local - supply food for the industry
- Local procurement – shire can lead with purchases (food)
- Development of a Wholesale market/ Distribution centre – owned by the growers
- Small farms are viable for high value boutique crops
- Diversity is KEY like botanicals, niche crops, premium products
- Get an advisory committee up and running
- Bring the council (staff/ managers/councillors) out to visit agribusinesses
- Industrial hemp, well placed for growing it, no infrastructure required, forestry and sawmills can be repurposed to create a new industry
- Smaller land should be able to apply for the rural rate
- Different markets vs being community minded, farm produce direct sales vs large scale contracts to big supermarket
- Support for tourism integration to agribusinesses
- Agritourism – ecotourism opportunities – farm gates – pick your own – there needs to be a program of support, networking, planning review.
- Need to think in a different way – small microbusiness – small family farm – with an off-farm income
- Sector/commodity representatives/experts (Dept Ag etc.) to be more involved.

CONNECTIONS & NETWORKS

FACTS

- Cardinia shire is unique: It's a growing urban community which is the reasoning behind the NEED for an Agribusiness officer to champion on behalf of the local food bowl stakeholders

GAPS

- Local community food supply chain – lack of market options?
- Disconnect between farmers/economy/businesses and the understanding of Planning permit requirements
- Rural planning applications - A lack of technical knowledge of Planners
- Permit process – e.g. building a dam or need a permit or general issue – there is no single point of contact
- The shire is a complex “beast” and it's difficult to negotiate contact points
- Disparity between elected Cr's and staff that do the work
- Staff need a better general understanding and education of Agriculture (decision making)
- A lack of rural identity – agribusinesses travel to Warragul for rural purchases

INCOME & EMPLOYMENT

FACTS

- A mix of full time and part time farmers
- Chicken meat industry: 1 farm can create up to 50 jobs (drivers, cleaners, feed supply) apart from processing
- Agribusiness: significant income and employment (seasonal, annual, contract labour, equipment purchases/services)
- Outreach/secondary income not always considered as economic contributors
- Road infrastructure – roadblocks during peak hours due to lack of local employment / workforce opportunities
- Gembrook - 80% employed off the hills – daily commute

GAPS

- Shift toward eco-tourism brings city visitors to farms, offers pick-your-own experiences, and encourages buying local produce directly instead of through supermarkets.
- Backpacker VISA – not considered to be rural and therefore not eligible for visa extensions for any work undertaken in the shire.

REALITIES

- Connection and disconnection are very difficult to manage due to short term staff turnover
- Tourism Web site only a few key attractions in the region

OPPORTUNITIES

- A dedicated rural officer would help with community connection (internal & external)
- Permanent role advocacy role for farmers and education within the shire
- Economic Development officer for each major industry - Industry vs Ag vs Tourism
- An ag champion needs to constantly advocate for the industry
- Need a Hub to support small businesses – that would be a wonderful initiative
- Agricultural industry to better educate the Council on important industry issues
- Council to ask what is needed and how we can help - forage gardens, market gardens, vertical walls, if area is a community benefit to them
- Farms close together – shared use infrastructure potential
- Establish a farming and food committee (reference for council)
- Among farmers - Support to do the right thing – local network (learning, training)
- Develop regional food trails across the shire
- Encourage Community Supported Agriculture, Forage gardens and food cultural places

REALITIES

- Rural roads are experiencing increased pressures people drive out of the shire for work
- Predict significant traffic pressures to continue/increase for workforce commuters
- Tourism is generally not strong across the shire some (some segments are)
- Hobby smaller farms rely on off farm income and have to diversify off-farm to manage income and reduce risk – harder to exit the industry if you want to retire due to planning zone restrictions (GWZ)
- International visas – PALM scheme in area (seasonal labour)

OPPORTUNITIES

- New industry attraction to build scale for transport/logistics
- Strengthen connect between planning and rural area versus urban landscape decision-making
- Mandatory site attendance/inspections for all rural planning applications
- Accentuate agribusiness and employment / jobs a priority for Cardinia shire

- A decentralised industrial estate – to cater to product processing in the shire would attract new businesses

Appendix F: Gross Value of Agricultural Production

Note: These values represent farmgate output, not profitability, and exclude production costs such as labour, insurance, and compliance.

Product	Quantities	Farmgate Price units (avg)	Industry Status	External Datasets	Estimated Annual
					Gross Value of Agricultural Production (\$)
Asparagus	Commercial growers: 7 Australian production: 95% Toal Area: 1000ha Average yield: cut 3 tonnes / acre /picked Annual volume approx. 5400 tonnes Packout: 70% Waste: 30%	Grower (\$7 / kg (2025) farmgate price)	Cardinia 90% of Australian total crop production has decreased from 95% Spring cut: mainly destined for the export market Summer cut: primarily destined for the domestic market.	Hort Innovation Industry report: 2024 crop 5400tn Value: 63.1m hort-innovation-ahsh-2023-24-vegetables-r.pdf	\$63.1m
Beef	Mixed Grazing > 20ha: Estimated grazing area: 35000ha 1.25 steers/ha = 43750 hd Fattening: 60%: 26250 hd Store: 40%: 17500hd Mixed Grazing: (4-20ha): 1896 ha 1896 Ha x 1.25 hd = 2370hd	VLE Koonwarra Fatten: 400kg + @\$4.00kg Est: \$1600-2400 hd Ave. \$2000/hd 26250 x \$2000 = 52.50m Store: 330kg+ @ \$4/kg Est: \$1300 – 1800 Ave. \$1600hd 17500 x 1600 = 28m 2370 x 1600 = 3.79m	Medium stocking rate grazing units with consistent feed availability GIS & Rates data indicate 50,700 Ha Nominated / identified as total area of grazing: 35,000 Ha = 17,100 Ha usable, identified as subject to grazing. #Identifies smaller lot holdings (< 40k annual income)	Verification Koonwarra (VLE) Cattle Market report: 2025 2025 Livestock producers: recent sales > 600kg, < 600kg # Significant increase in livestock prices in 2025 calendar year compared with 2024 (commencement of audit project)	84.3m
Sheep	Commercial businesses: 15 Average size: 26.5 ha Total area: 400 ha stocking 18 dse/ Ha = 7,200 head Prime lamb: 3600hd 25 kg/avg weight = \$280	Source: Sth Gippsland report October 2025 Prime lambs: \$248-315/hd Ave. Heavy weight \$280/hd	Small industry in the region Smaller lambs < 25kg: \$735,000 Prime lambs > 25kg: \$980,000	Trade sheep value calculated only Small industry Predominately cattle grazing enterprises in area	1.6m

	Remaining: 3,600 head @ \$200 = \$386,085	Light weight: 180-245/hd			
Dairy	Cardinia shire Cardinia Shire dairy farm businesses = 40 (+ - 5) (4.5% of Gippsland dairy farms) Gippsland milk production 84.2 million litres Ave = 2,105,000 litres per farm Ave herd size is 340 cows Ave = 6,190 litres per cow Ave milk solids produced per cow 503kg/MS Ave milk price \$8.41 kg/MS Total number of milking cows in Cardinia Shire = 13,600 Est. avg. value per farm 340 cows x 503kg/MS/cow x \$8.41 = \$1,438,000 40 farms x \$1,438,000 = \$57,530,000	\$8.41/kg Milk Solids	An avg of 4 FTE's are employed in the dairy industry per farm. Dairy farms employ 19% of all agriculture jobs in Victoria. Horticulture is the largest agriculture employer with 21% of all jobs. Dairy farms are strong contributors to the local economy as much of their costs go towards other small businesses in the shire including, fertiliser sellers, agricultural contractors, local farm supply stores, employment of staff, purchase of fodder, farm machinery dealers and repairers. Local manufacturers and value add businesses include Gippsland Jersey in Pakenham	Gipps Dairy provided estimate of dairy farms in Cardinia Shire 2024/25 season review by Gippsland Farm Monitor Project) "Average profits in Gippsland declined by 57%, falling below the long-term average in 2024-25. A 10% decrease in average milk price and 11% increase in feeding costs made managing dry conditions difficult. Severe rainfall deficiencies for south, west and central Gippsland provided challenges for homegrown feed production. DSFV: 5 processors in Cardinia Shire	\$57.53m Average net farm income was negative for the first time since 2018-19 (a dry year), due to the higher interest and interest lease costs, and lower profits."
Potatoes	Commercial growers: 12 Production area: avg 60ha/120ha /annum Total: (mix of ware, processing and crisping @ 40 - 60 tonne per ha 50tn x 720ha = 36000 @0.50c/kg = \$18 mil	#Seasonal fluctuations in farmgate price: 50c/kg \$400/t prior to wash and grading 40tn-60tn/ha average yield	Continual decline of industry over last decade from 40+ growers to 12. Crisping/processing companies engaging overseas companies for supplies Local ware packers spreading risk by chasing cheaper supplies from broadacre production further afield: Gippsland, SA, NSW and Tasmania.	#Source: Agribusiness industry data, farmers Prices are fluctuating due to: SA crop failure Crop disease	18m

Poultry (Chicken Meat)

29 Active farms including: • 15 Broiler farms -meat (81 sheds) with avg shed size 38,200 birds with a total of 3,095,000 birds at any one time • 11 Free range farms – meat (30 sheds) with avg shed size 31,000 birds with a total of 931,000 birds at any one time • 3 Breeder farms which Inghams and Turosi own or lease to hatch out and grow chickens Total Production: • Broiler Farms - Averaged size farm has 5.4 sheds with avg 38,200 birds per shed = 206,280 avg birds per farm x 5.5 batches per year = 1,134,500 birds per farm/year Total Broiler farms - 15 farms x 1,134,500 = 17,018,000 birds/year • Free Range Farms - Averaged size farm has 2.7 sheds with avg 31,000 birds per shed = 83,700 avg birds per farm x 5.5 batches per year = 460,350 birds per farm/year • Total Free-Range farms - 11 farms x 460,350 = 5,063,800 birds/year Total Birds grown for meat in Cardinia Shire annually = 22,081,850 Approx. 77% conventional & 23% Free range Ranging 2-10 sheds/farm Growers receive: \$26.15million per year	Price received at farmgate: \$1.18/bird Tunnel vent \$1.20/ bird Free range	The 29 Cardinia shire poultry farm businesses comprise 12% of Victorian poultry businesses, and 15.5% of all broilers grown in Victoria.¹ Facilities are expensive. Value needs to acknowledge cost of infrastructure - highest in Ag commodity High efficiency: use of protein/Ha. The processor owns the birds and covers feed costs; whilst farmers own the sheds and land and provide a contract growing service for a fee (i.e. approximately \$1.18 -\$1.20 per bird dependant on growing system and the supplier of the birds. Other ancillary benefits from the chicken growing farming is the employment generated in; farm management, bird management, washing and cleaning sheds out after each cycle, feed suppliers, truck drivers, and end processing.		\$26.15m
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¹ https://agriculture.vic.gov.au/about/agriculture-in-victoria/victorias-agriculture-and-food-industries/july-2024-update/Poultry-Industry-Fast-Facts_June-2024.pdf

Nursery Flowers Cultivated turf	Large scale production nurseries Southern - Cultivated turf Northern regions – Flowers (wholesale focus) New Berry plant nursery 5m plants and expanding @ \$2 per plant = \$10 m	Various sizes pots/trees products	Significant production in the region and growing as urban encroachment pushing out growers from Casey	ABS data: 50,735,457 10m (berry plant material)	\$60m
Eggs	Commercial farms: 8 farms: layers Toal birds: 625,000 24 sheds: 20, 000 / shed Range 2-8 sheds on farm Lay: 300 eggs/year Total eggs/year: 144000000	Price received at farmgate 0.20 c/egg	Limited information available as deregulated industry:		\$28.8m
Vegetables	Tonnage values hard to estimate (drought, access to water, seasonal growing conditions) 12 commercial growers in the region Irrigated area: 3896 ha (ABARES 2023) 15% non-cropping land: 584ha Crop rotation: 50-60% of ground under crop area per annum Total/year= 2000ha cropped	National Horticultural Benchmarking project Ave. crop yield production/ha value: \$45,000	Significant vegetables: Koo Wee Rup and Catani areas Asparagus, broccolini, broccoli, cauliflower, corn, cabbage, onions Coriander, spring onions, Asian vegetables, salad mix, Celery, Snow peas Production moved out from inner areas (Kingston)	Use of benchmark data (average \$/ha of crop grown)	\$90m
Pomme fruit	Commercial businesses: 8-10 Average size: 25 ha Total area: 175 ha Average yield: 40 t/ha Toal production: 6,000 tonnes X \$3000 tonne = 18m	Farmgate: \$3.00 / kg U Pick: \$3.50kg	New high density tree planting to increase production by 40-50%	ABS (2021) Apples 7,014,670 Pears 826,381	\$18m
Wine grapes	Commercial businesses: 8-10 vineyards Average size: 6-7 ha farms Total area = 55 ha Average yield: 6.8 tonne / ha 18 Cases / tonne = 6,732 cases @ \$ 250 / case = \$	\$ 2500 / tonne of grapes. Or approx. \$250 / case	Boutique vineyards Small land area but high-quality wines produced Majority: bottling their own and/or combining others Cellar door and online sales: \$200-350/case		1.7m

Citrus	Commercial businesses: 2-3 growers Average size: 3800 trees, 10 ha Average yield: 57t/ha (150kg/tree at 380 trees/ha) 5700 tonnes @ \$250 /T	\$250 /tonne	Small production but meets end of season demand. Potential to increase (climate change)		\$1.5m
Berries	Commercial growers: 6-7 mixed growers Strawberry: additional two growers Yields approx. 10 tonnes per ha Average lot size 10 ha Total area: 70 ha@700tonnes = \$7m Recent new/additional production (blueberry, raspberry, strawberries, blackberries 15 ha – 60 tonnes = 440 tonnes @ \$10,000 = \$4.4 mil	\$2 / punnet (wholesale estimate) Estimate: \$10,000/tonne U-pick \$13 / kg blueberries \$15/ kg raspberries \$14/kg strawberries	Large scale commercial farms expanding in district U-pick facilities generate tourism in growing season Scattered berry crops 15 years ago there was no commercial berry industry in the shire		11.4m
Hay Fodder	180 properties averaging 25 Ha = 4500 ha 80% farms = 3600 ha Round bales: majority of production – 12 bales per Ha @ \$120 = \$1440/ha 20% farms 900 ha: small square bales 144sq bales/Ha = 36000 @ \$15 = \$1.944m	\$120/ round bale \$5.1m \$15 /square bales 1.944m	Most additional hay is being produced for grazing property usage (not included) difficult to determine 12 sq to every round bale 144 sq/ha (pasture fodder)		7m
Misc.	Small scale production systems scattered throughout the shire: examples include Estimate x no. of growers Alpacas & Llamas: 7-8 growers Stonefruit: 3-5 growers Tomatoes: 2-4 growers Cherries: 2 farms Hazelnuts: 1 grower Truffles: 2 growers Garlic: 4-5 growers Christmas trees 1-2 Organic fruit & vegetables: 8-10 growers Aquaculture (Trout/Commercial fishing) 1-2 Lavender: 1 grower Olives 1-2 growers Kiwi Fruit: 1 grower Tea spices: 1-2 growers Turmeric, Lemongrass and other spices: 4-5 growers	Various price units \$4-18 / kg Farmgate & Wholesale U Pick: 2025 season Cherries: \$14/kg Stonefruit: \$4/kg	Often small in scale and quantities with limited opportunity for expansion based on lot size. \$ / volumes not confirmed .	Primarily anecdotal evidence: Small farms, high yielding and quality products Various small crops in trial, establishment and industry development phase. Source: ABS estimates, Survey, Industry reports, Interviews, FLR, Morn Pen	\$26m

	Wheat, oats, sunflower 10-15 growers Pomegranates: 1 grower Herb's: 5-8 growers			
ABS (other)	Pigs, other livestock, other fruit, Pastures: Irrigated (Lucerne) Wool Other fibre Hot houses		Opportunities according to soil type and property size/characteristics	ABS data (2021) \$3,868,073 Commodity price increases over past year reflect a small increase in estimated production value
Total				\$500.38m

*The value of agricultural production is a measurement of an agricultural sector's output in monetary terms, typically at the farm gate or wholesale level, excluding marketing and transport costs. It quantifies the worth of crops, livestock, and other farm products before they are sold to other sectors of the economy.

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