

Mallee

**Regional Economic
Development Strategy**

SUPPORTING ANALYSIS

Acknowledgement of Country

The Department of Jobs, Precincts and Regions acknowledge the Traditional Owners of the lands and waters on which we live and work, and pay our respects to their Elders past, present and emerging.

We acknowledge that the Mallee Regional Partnership region is on traditional lands, including those lands of the First Peoples of the Millewa-Mallee (being Latji Latji, Ngintait and Nyeri Nyeri Traditional Owners, and the Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagalk peoples), Barengi Gadjin, Dja Dja Wurrung, Taungurung and Yorta Yorta Nations, as well as other Traditional Owner groups in Victoria who are not formally recognised.

We acknowledge the diversity of Aboriginal Victorians, their communities and cultures, the intrinsic connection to Country, the contribution and interest of Aboriginal people and organisations in developing a prosperous region. This Strategy is committed to advancing the principles of Aboriginal self-determination and supporting communities to realise self-determined economic development objectives.

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01 Economic Insights

1.1 Business and Industry Analysis

After a period of slower employment and output growth, the Mallee has realised stronger economic outcomes in recent years. As the region's major socioeconomic centre, Mildura is driving economic performance however there has also been growth realised in smaller areas, particularly those adjacent to the Murray River.

- The region maintains reliance on traditional Agriculture and Manufacturing industries as the pillars of regional economic activity, but the two sectors have ceded ground to a growing Health Care and Social Assistance sector. The declining reliance on traditional industries reflects the changing nature of the local economies.
- When considering both employment and output, the region is specialised (or concentrated) primarily in Agriculture. The region also displays specialisation in Public Administration and Safety.

In contrast to long-term economic trends across the Mallee, the region's international export value has realised strong growth over the past decade and now totals \$906.6 million. Tourism has also realised steady increases, with most visits coming from domestic tourists

- Via an extensive road and rail network, the region is well connected with air and seaports in Adelaide, Melbourne and Geelong. These gateways have enabled the region to achieve strong export growth, particularly in agricultural goods.
- The region's various natural and cultural attractions, including the Murray River and Lake Tyrrell ensure that tourism is a significant contributor to the region's economy, particularly for the Mildura LGA.

As regions seek to become more competitive in the global marketplace, economies are becoming increasingly specialised to focus production on regional strengths. For governments and local leaders, it has therefore become important to understand regional assets and attributes to better tailor plans and policies to support future economic growth and development.

A simple form of analysis to understand an economy's underlying structure is Location Quotient (LQ) analysis. This form of analysis compares industries' size and growth as a proportion of total economic activity relative to Victorian averages. The higher the LQ, the more significant, and therefore specialised, an industry is to the local economy relative to Victoria. This is also referred to as industry concentration. Scores above 1.25 are typically considered to indicate specialisation.



LQ Analysis, Employment

Figure 1.1.1 (below) identifies the Mallee Regional Partnership region’s (the region) employment specialisations. Industries are divided into four colour groups according to their quadrant position:

- Blue sectors are regional concentrations which are experiencing faster growth than state averages

- Green sectors are regional concentrations which are experiencing slower growth (or faster declines) than state averages

- Orange sectors are emerging industries which are not regional concentrations but are experiencing faster growth (or slower declines) than state averages

- Grey sectors are not regional concentrations and are experiencing slower growth (or faster declines) than state averages

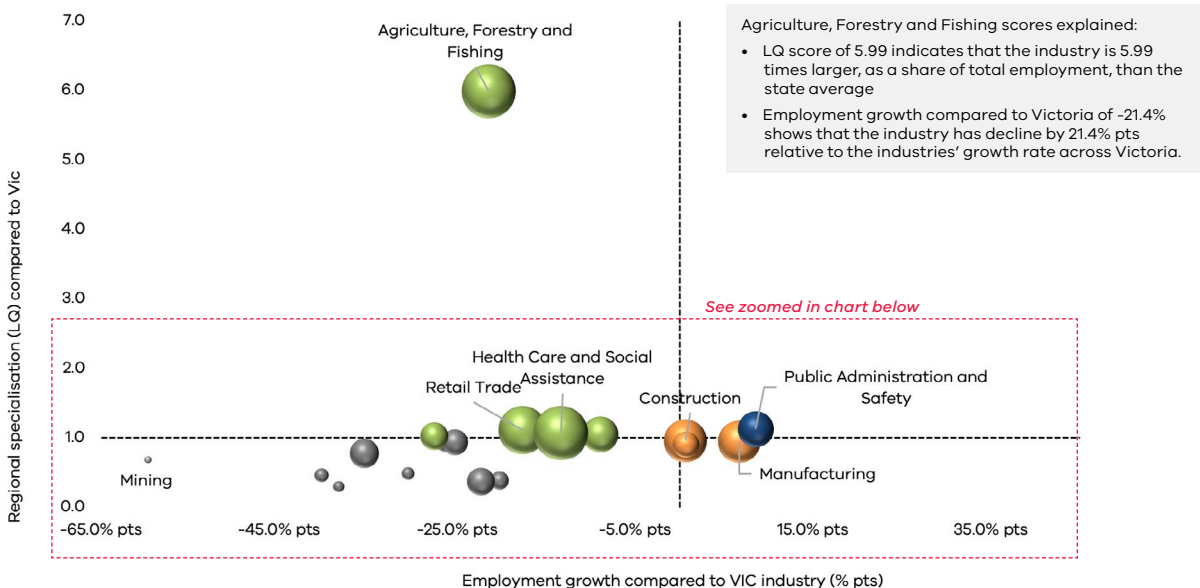
The position on the vertical axis indicates the industry’s degree of employment specialisation (location quotient)¹ relative to the Victorian economy. For example, a value of 4.0 means that, as a share of total employment in the local economy, the industry employs four times as many people than the Victorian average². The position on the horizontal axis indicates the difference in each industries’ employment growth (2015 to 2020³) between the region and the Victorian average. For example, a 5 per cent value indicates that regional employment in the industry has grown 5 percentage points faster (between 2015 and 2020) relative to the industry’s average growth rate in Victoria. The size of each bubble indicates the share of the region’s workforce employed in the industry.

1. The Location Quotient tells us how regions compare to that of the broader economy in terms of size. Where there is variation in size relative to the broader economy, LQ can be an indicator of strength and ‘importance’ to the future of the economy. However, it is only one indicator and further analysis is needed to determine if the industry warrants future investment and attention by government. Furthermore, LQ does not tell us if a high LQ industry is a driver or a consequence of growth. This is important because an industry may only exist as a consequence of government funding (as is the case for correctional facilities/prisons) and not because of the private market’s demand for its goods and services. While there may be policy or other reasons to support these industries, these reasons may not be overtly economic in nature.

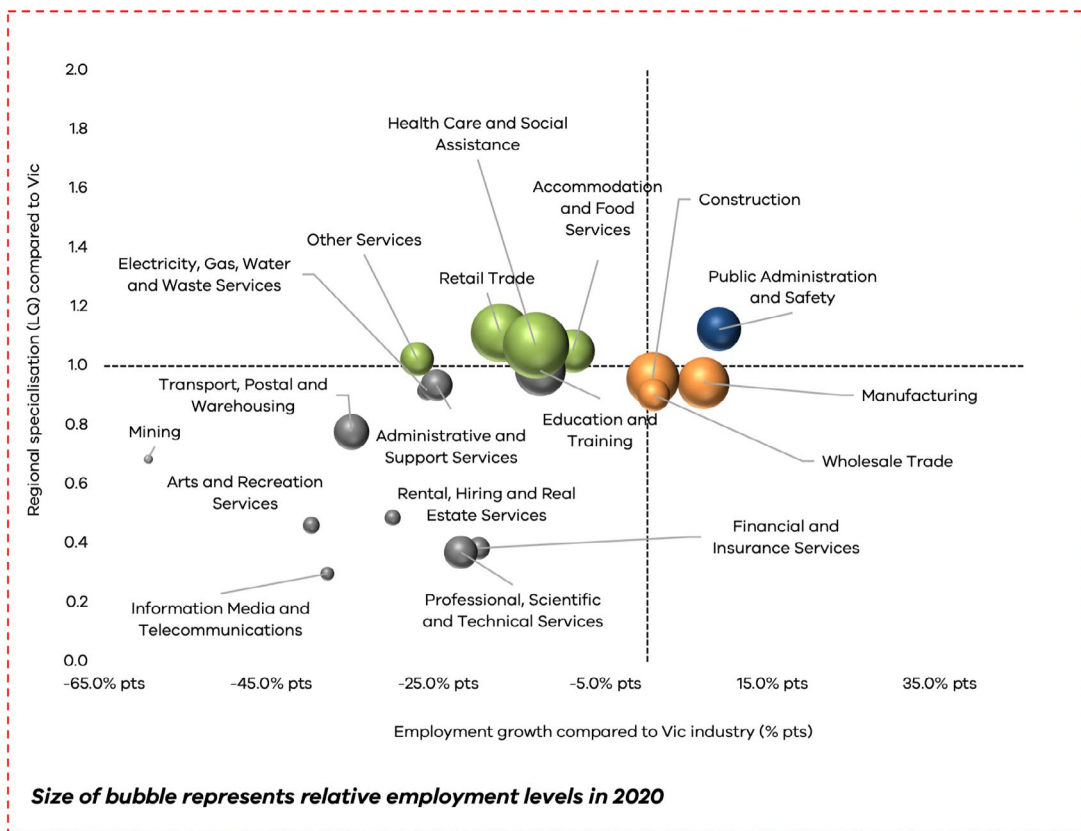
2. The comparator region used is the Victorian economy excluding the regional partnership to greater reflect the comparison to the region’s economy.

3. Estimates of industry employment in 2020 include early impacts of COVID-19. While this may subdue the net growth between 2015–2020, it does not affect the comparative growth metrics used in this analysis.

Figure 1.1.1: Location Quotient (Employment)



Size of bubble represents relative employment levels in 2020



(NIEIR, 2020)



As represented in Figure 1.1.1, the region is specialised in Agriculture, Forestry and Fishing; representing over 14 per cent of the Mallee's employment.

Among subindustries, Beverage and Tobacco Product Manufacturing; Water Supply, Sewerage and Drainage Services; Non-Metallic Mineral Mining and Quarrying; Heavy and Civil Engineering Construction; and Fuel Retailing also recorded strong employment specialisation alongside the more traditional agriculture sub-sectors.

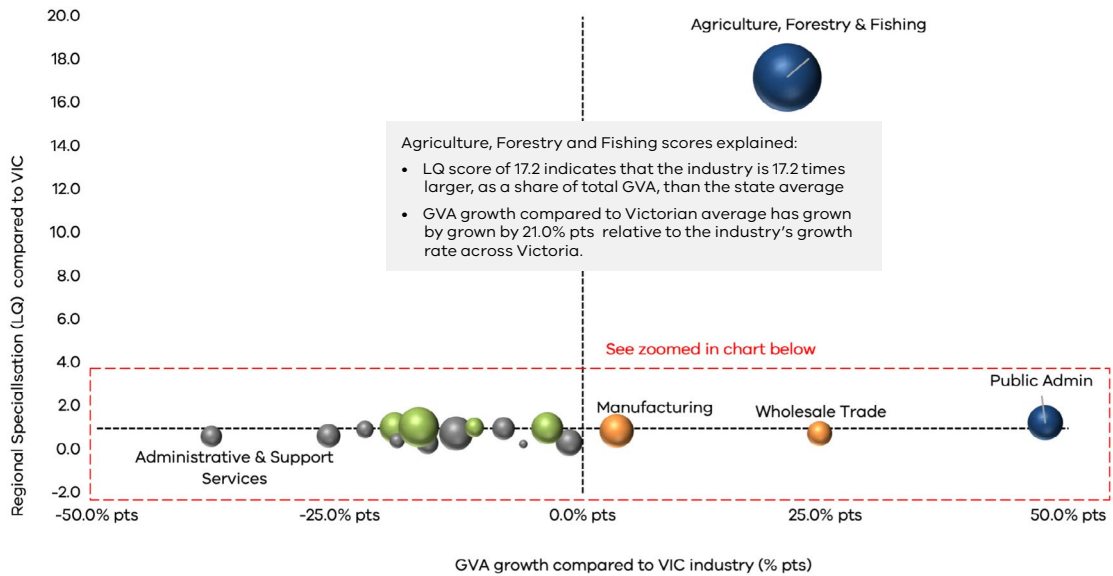
Over the past five years, the region has seen employment growth outpace the state average in four (of 19) sectors; Public Administration & Safety (+8.6% pts), Manufacturing (+6.7% pts) Construction (+0.7% pts) and Wholesale Trade (+0.7% pts). Among industries which lagged average employment growth for the state, four industries had a LQ score between 1.00 and 1.25. While these industries are slightly more concentrated than the state average, the difference is not sufficiently great to be defined as a regional specialisation.

When metropolitan Melbourne is excluded, and the region is compared with the rest of regional Victoria, the Mallee demonstrates employment specialisations in Agriculture, Forestry and Fishing and Wholesale Trade. As governments and local leaders plan for the region's future economic direction, it is important to consider the Mallee's position both within regional Victoria and the state.

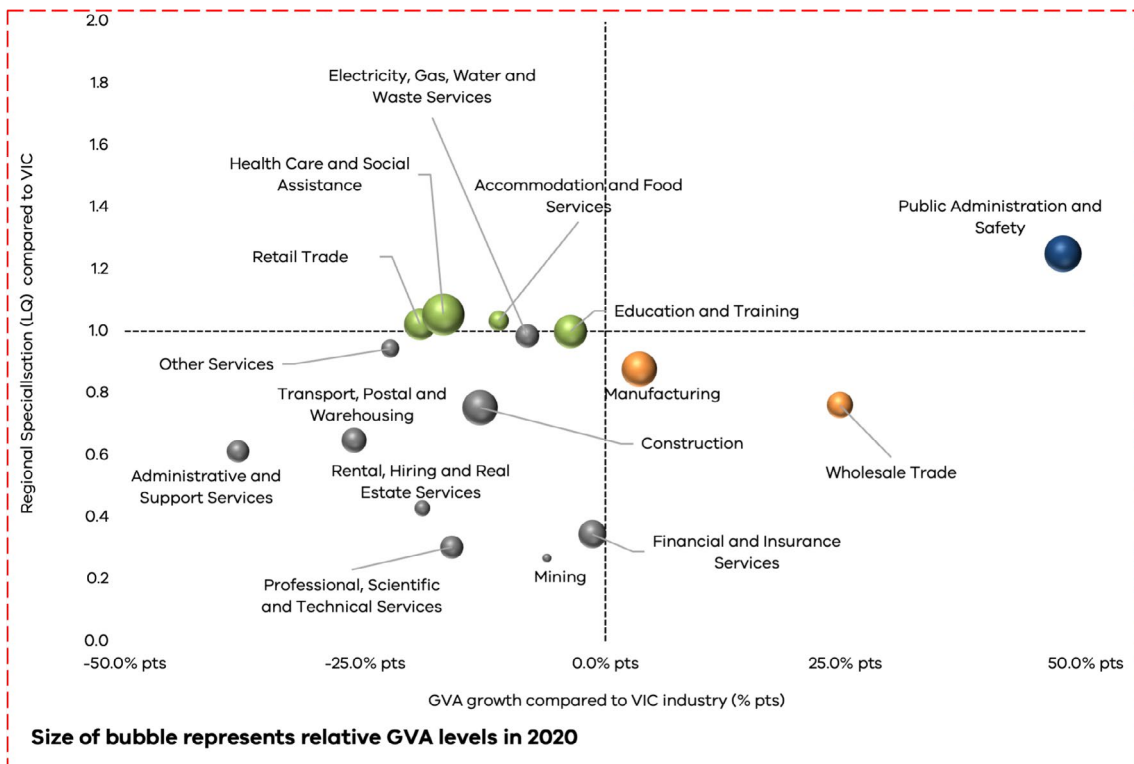
LQ analysis, GVA

Figure 1.1.2 (below) identifies the Mallee's economic output specialisations in terms of Gross Value Added (GVA). Using the same approach as above, this analysis compares industries' size and growth as a proportion of total economic GVA relative to Victorian averages. While the employment LQ captures the industry concentration of the regional workforce, it does not capture the economic contribution of employment in terms of GVA. The GVA LQ analysis provides this insight. The position on the vertical axis indicates the industry's degree of GVA specialisation relative to the Victorian economy. For example, a value of 2.0 means that, as a share of the total GVA in the local economy, the industry is two times larger than the Victorian average. The position on the horizontal axis indicates the difference in each industries' GVA growth (2015 to 2020) between the region and the Victorian average, the size of each bubble indicates the share of the regions GVA produced by the industry.

Figure 1.1.2: Location Quotient (GVA)



Size of bubble represents relative GVA levels in 2020



(NIEIR, 2020) Note: For visibility of all sectors some bubbles have been represented as rings, the circumference of the circle is taken as size of the bubble.

As represented in Figure 1.1.2, the region is specialised in Agriculture, Forestry and Fishing, and Public Administration and Safety.

Among the two sectors, both had a rise in GVA compared to the Victorian industry average over the five years to 2020.

At a subindustry level, the Mallee is also specialised in Beverage and Tobacco Product Manufacturing; Water Supply, Sewerage and Drainage Services; Non-Metallic Mineral Mining and Quarrying, alongside the more traditional agriculture sub-sectors.

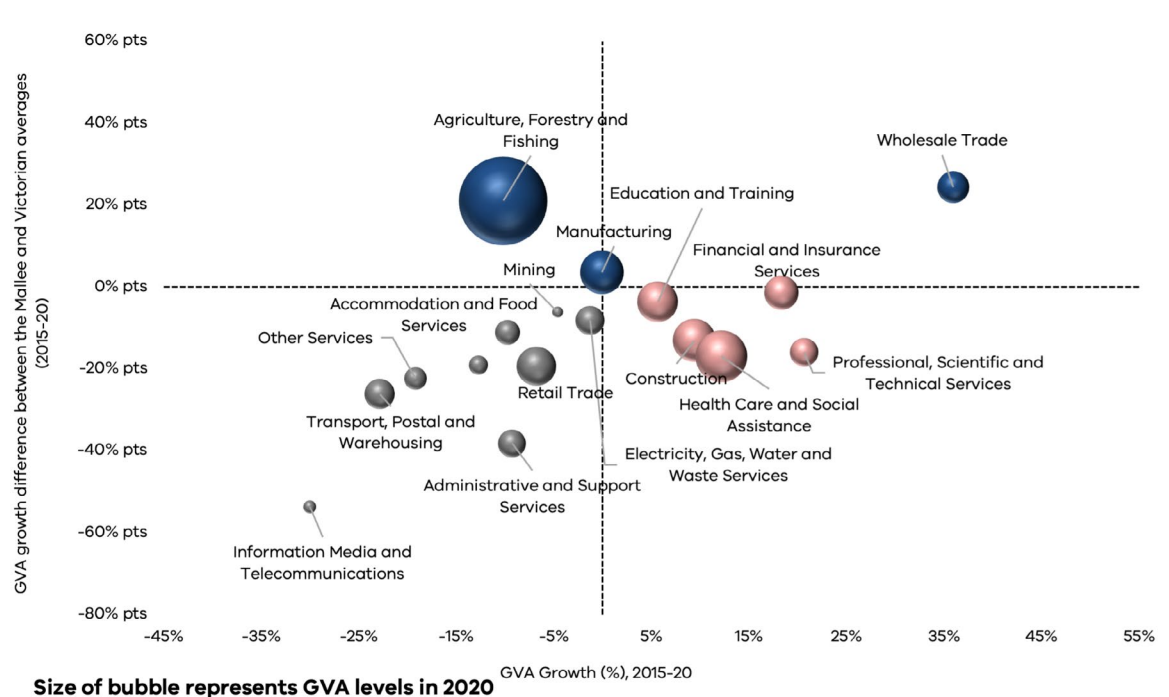
Shift-Share Analysis

Shift-Share Analysis is used to better understand the drivers of regional economic growth. The analysis breaks industry growth into two drivers of change: (1) a Victorian state industry effect and (2) a local effect. By decomposing the drivers, the analysis identifies whether an industry’s growth reflects its performance across the region or whether its growth is more a result of broader trends.

Depicted in Figure 1.1.3 below, industries are divided into three colour groups:

- Blue industries which are outperforming the average industry growth rate in Victoria
- Pink industries which are underperforming the average industry growth rate in Victoria but are producing greater output over time
- Grey industries which are underperforming the average industry growth rate in Victoria and are declining in output production over time.

Figure 1.1.3: Shift-Share Analysis



(NIEIR, 2020)

The position on the vertical axis indicates the difference in each industry's average GVA growth (2015–20) between the region and the Victorian average. The position on the horizontal axis indicates the amount each industry in the region has grown or declined between 2015 and 2020. The size of each bubble indicates the amount of output produced in the industry.

Relative to the Victorian average, three (of 19) industries outperformed the average growth across the state, led by Wholesale Trade (+24.4% pts) and Agriculture, Forestry and Fishing (+21.0% pts). Furthermore, seven sectors saw overall GVA growth between 2015 and 2020 despite the early impacts of COVID-19.

Of the sectors not to record positive GVA growth, Agriculture, Forestry and Fishing was the only sector to outperform the sector's average performance across the state. This indicates that the Agriculture, Forestry and Fishing sector faced challenging conditions across the state in recent years and the Mallee recorded strong results relative to other regions.

The region exhibits further strengths among its subindustries. Over the past five years, Agriculture, Food Product Manufacturing, Water Supply, Sewage and Drainage Services, Machinery and Equipment Wholesaling, Heavy and Civil Engineering Construction, Finance, Public Order, Safety and Regulatory Services, Social Assistance Services all outperformed the state's average growth rate.

Strong results across a several sectors indicates the comparative strength of the Mallee region. Consistently outperforming state averages demonstrates that there are regional characteristics that contribute to the region's success. These should be leveraged to support future economic opportunities.

Industry Cluster Analysis

Cluster Analysis is used to help identify industries which may have a comparative advantage. Understanding the networks of businesses which create wealth in the region assists in determining the factors which makes a region successful and the strengths which can be leveraged to pursue future economic opportunities. Industry clusters can be supported by a range of conditions:

- **Factor conditions:** Businesses located near each other enjoy low-cost transportation of basic factors, such as raw materials and other physical resources. Advanced factors, such as knowledge and 'the business spirit', are also likely to be shared by businesses operating in close proximity.
- **Demand conditions:** Proximity to a sizeable and sophisticated local market can encourage businesses to compete for customers by providing quality and personalised service.
- **Related and supporting industries:** Businesses can focus on reducing costs by efficiently improving their production process if supplementary suppliers are nearby.
- **Company strategy, structure, and rivalry:** Businesses can gain from constructive rivalry if they learn from opportunities i.e. niche information, shared resources, or ideas, and if they can strategically innovate from rival threats.⁴

In Table 1.1.4 below, each industry's employment LQ and business count LQ are presented to help identify clusters. A score above 1.25 is considered the benchmark for an industry cluster.

4. Porter, M. (1998). Clusters and the new economics of competition. Harvard Business Review, 76 (6), 77–90

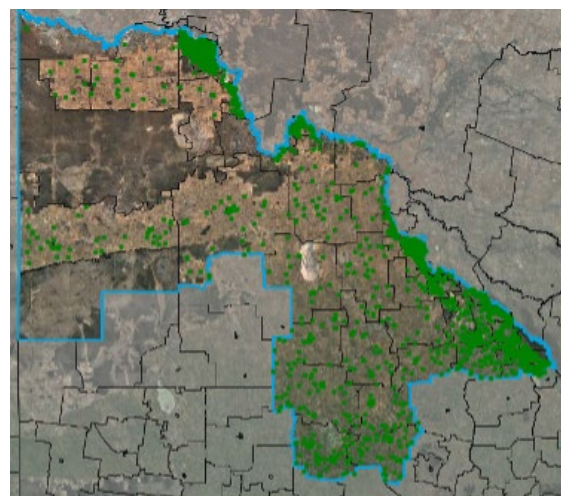
Table 1.1.4: Industry Cluster Analysis

Sector	LQ (Employment)	LQ (Business count ⁵)	Clusters
Agriculture, Forestry and Fishing	5.99	6.60	✓
Mining	0.69	0.92	✗
Manufacturing	0.94	0.98	✗
Electricity, Gas, Water and Waste Services	0.92	1.13	✗
Construction	0.96	0.72	✗
Wholesale Trade	0.90	0.71	✗
Retail Trade	1.11	1.03	✗
Accommodation and Food Services	1.05	0.87	✗
Transport, Postal and Warehousing	0.78	0.55	✗
Information Media and Telecommunications	0.30	0.24	✗
Financial and Insurance Services	0.38	0.64	✗
Rental, Hiring and Real Estate Services	0.49	0.75	✗
Professional, Scientific and Technical Services	0.37	0.35	✗
Administrative and Support Services	0.94	0.78	✗
Public Administration and Safety	1.13	0.46	✗
Education and Training	0.98	0.56	✗
Health Care and Social Assistance	1.07	0.53	✗
Arts and Recreation Services	0.46	0.47	✗
Other Services	1.02	1.10	✗

(ABS, 2021) (NIEIR, 2020)

With higher concentrations than the state average, the region has a strong business cluster in Agriculture, Forestry and Fishing.

It is important to note however that while the data does not highlight more clusters, they may still be present. By considering the benefits of clustering at a more granular level i.e. subindustry or defined geography, there remains significant scope to explore how clusters may support economic opportunities in the region.

Figure 1.1.5: Cluster mapping**Agriculture businesses**

(REMPAN, 2021)

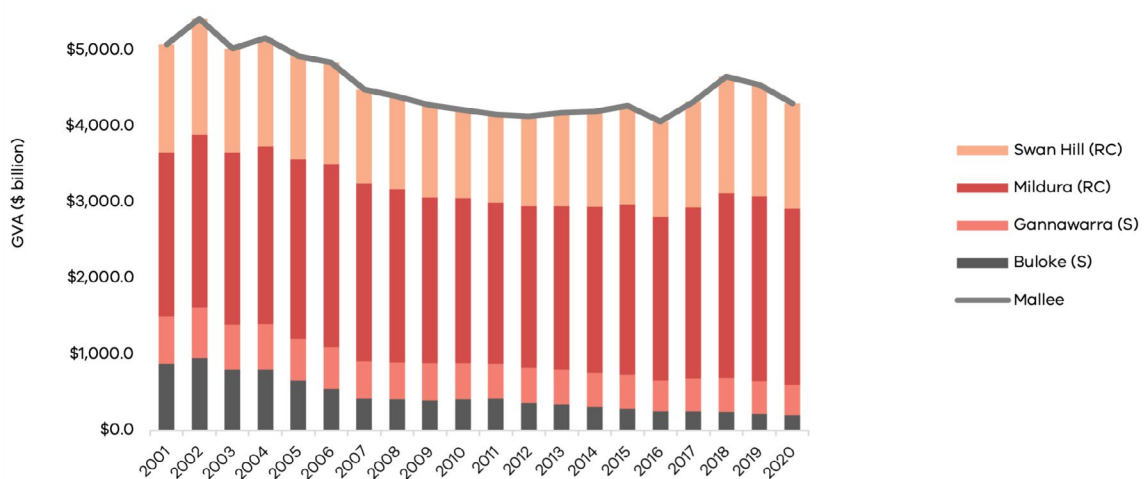
5. Business count sourced from REMPLAN and includes all active GST trading businesses with the exception of family trusts and self-managed superannuation funds

Gross Value Add

Since the turn of the century, the Mallee’s Gross Value Add (GVA) has been in slight decline, particularly between FY2002 and FY2016, where GVA fell from \$5.4 billion to \$4.1 billion (see Figure 1.1.6). The region realised growth up to FY2018 to \$4.6 billion, contracting again to \$4.3 billion in FY2020.

At an LGA level, trends vary. Mildura’s GVA has fluctuated around \$2.3 billion with growth since 2001. In comparison, Buloke has experienced large GVA falls over the past two decades; down from \$0.9 billion in 2001 to \$0.2 billion in 2020. This is largely attributable to agricultural falls between 2001 and 2007, coinciding with the Millennium Drought. Gannawarra also realised GVA falls (down from \$0.6 billion to \$0.4 billion) as agriculture and manufacturing sectors retracted. Swan Hill’s GVA has fluctuated around \$1.3 billion, with a slight contraction since 2001.

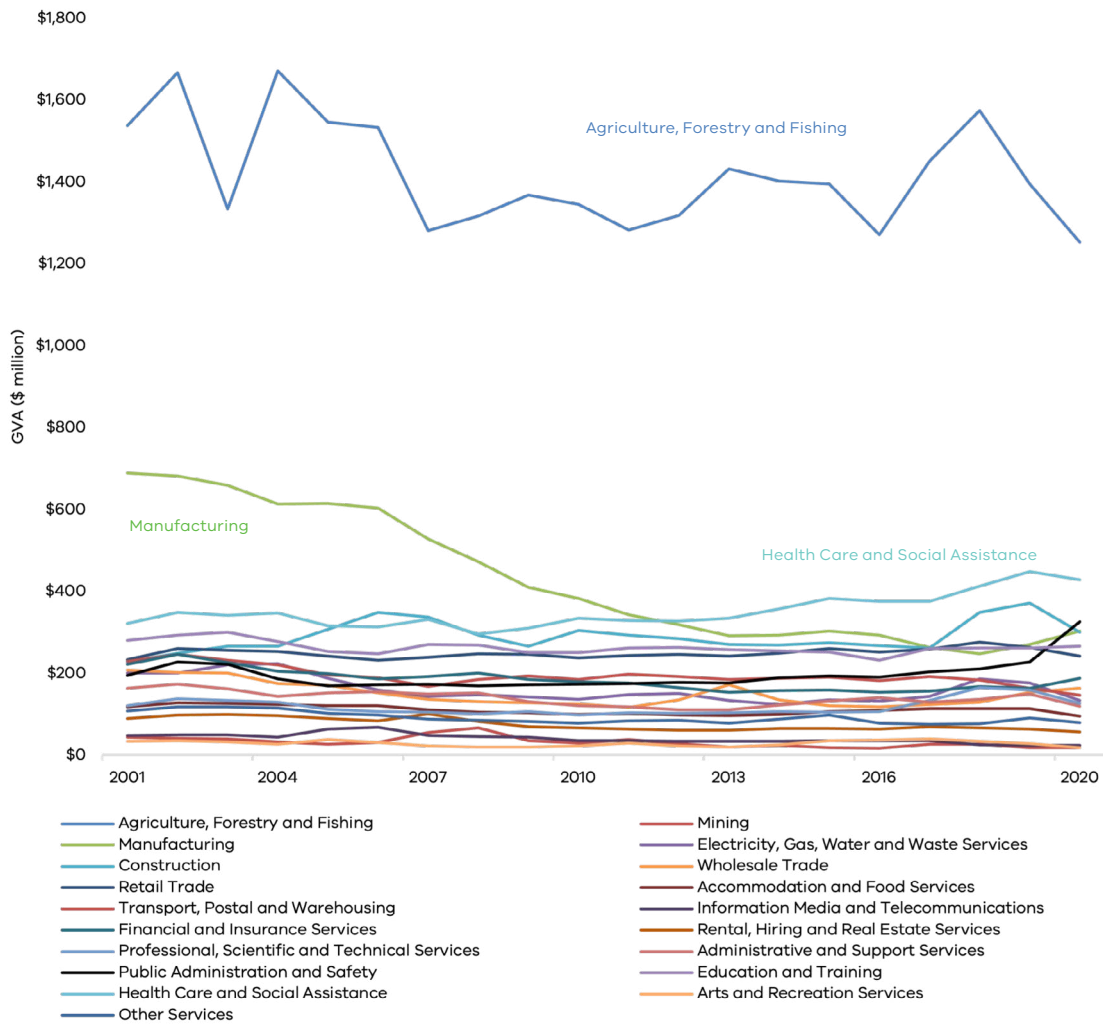
Figure 1.1.6: GVA over time by LGA



(NIEIR, 2020)

Among sectors, the region’s two largest industries Agriculture, Forestry and Fishing and Manufacturing have seen falls in GVA. Despite this, the industries remain the most significant contributors to the region’s economic output. Service driven industries such as Health Care and Social Assistance, Public Administration and Construction have experienced notable growth over the past 20 years. Respectively, they are now the second, third and fourth largest industries in the region (see Figure 1.1.7).

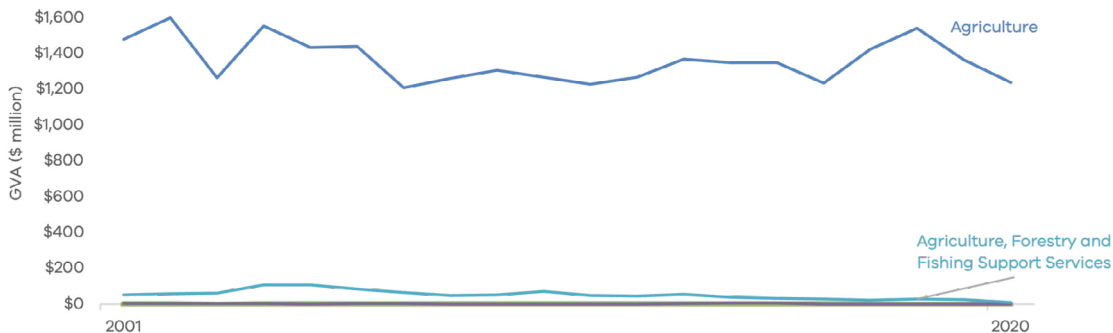
Figure 1.1.7: GVA by industry



(NIEIR, 2020)

At a subindustry level, Agriculture is the most significant contributor to GVA despite falls in value (see Figure 1.1.8). Primary produce includes nuts, grains and grapes. The region’s tristate access, Mediterranean climate, affordable agriculture land, modern irrigation systems and historic comparative advantage gives the region further advantages in production of such produce.

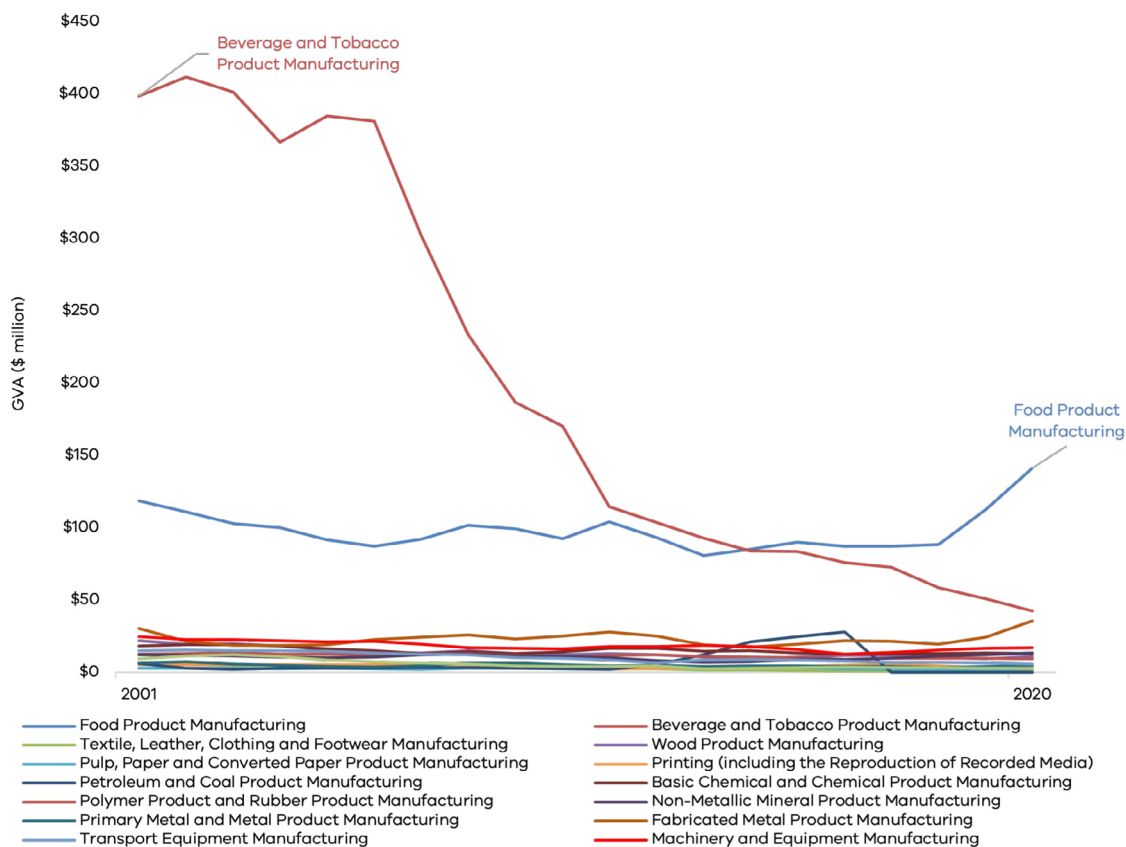
Figure 1.1.8: Agriculture, Forestry and Fishing GVA



(NIEIR, 2020)

The decline in Manufacturing reflects a steep fall in Beverage and Tobacco Product Manufacturing, a trend observed across the state. The region also has a significant Food Product Manufacturing sector, which has recorded steady GVA output over the past 20 years, and steady growth since FY2013, and has shown a strong trajectory of growth since FY2018 (see Figure 1.1.9).

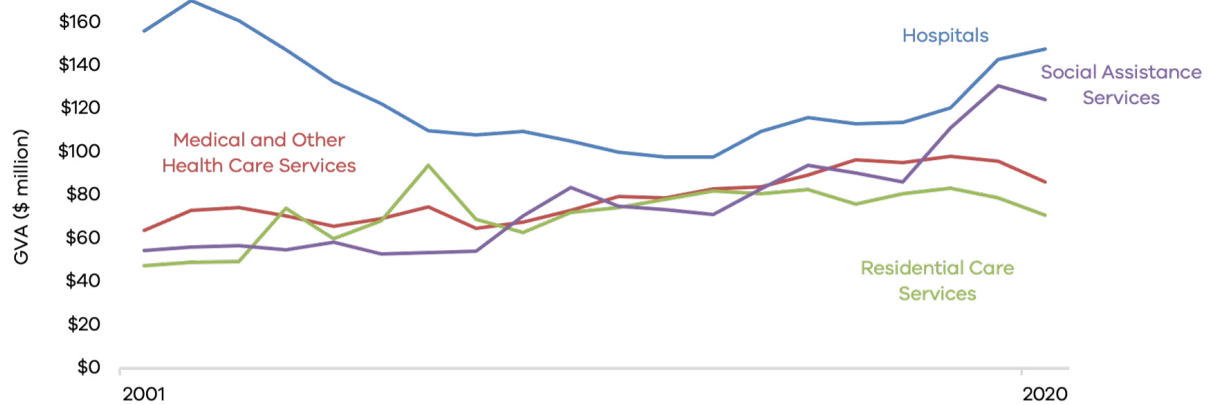
Figure 1.1.9: Manufacturing GVA



(NIEIR, 2020)

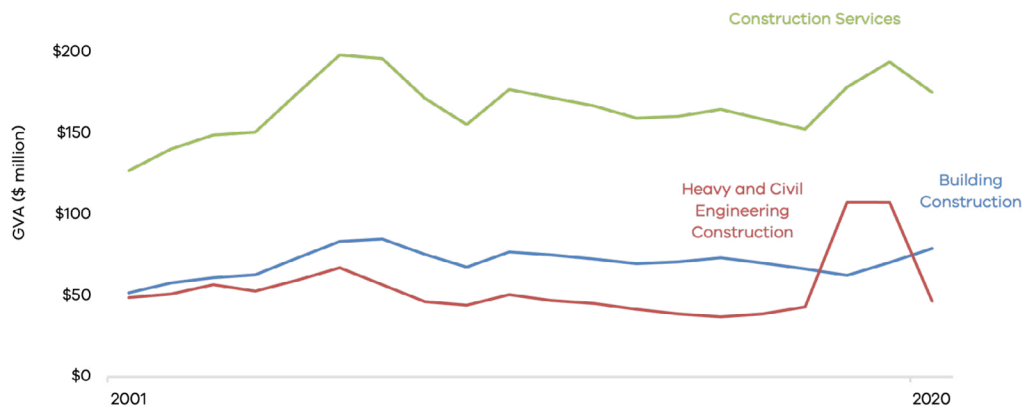
Health Care and Social Assistance Services have seen fairly steady growth across all subsectors in the past decade (Figure 1.1.10), while Construction Services and Building Construction are the largest contributors to the sector's GVA, while Heavy and Civil Engineering Construction has realised a GVA growth between FY2017-2019, however FY2020 estimates record a return to trend (see Figure 1.1.11).

Figure 1.1.10: Health Care and Social Assistance GVA



(NIEIR, 2020)

Figure 1.1.11: Construction GVA



(NIEIR, 2020)

Business growth

Over the past five years, more than 2,300 new businesses have established themselves in the Mallee region, mostly concentrated around Mildura, and other population centres along the Murray River. By industry, the highest proportion were in Agriculture, Forestry and Fishing (22 per cent or 538 businesses) and Construction (15 per cent or 361 businesses). At a subindustry level, 38 per cent (or 207 businesses) of the new agriculture businesses were in Agriculture and Fishing Support Services, 15 per cent (or 78 businesses) were in Grape Growing and 12 per cent (67 businesses) were in Grain-Sheep or Grain-Beef Cattle Farming.

Other industries of significant business growth are:

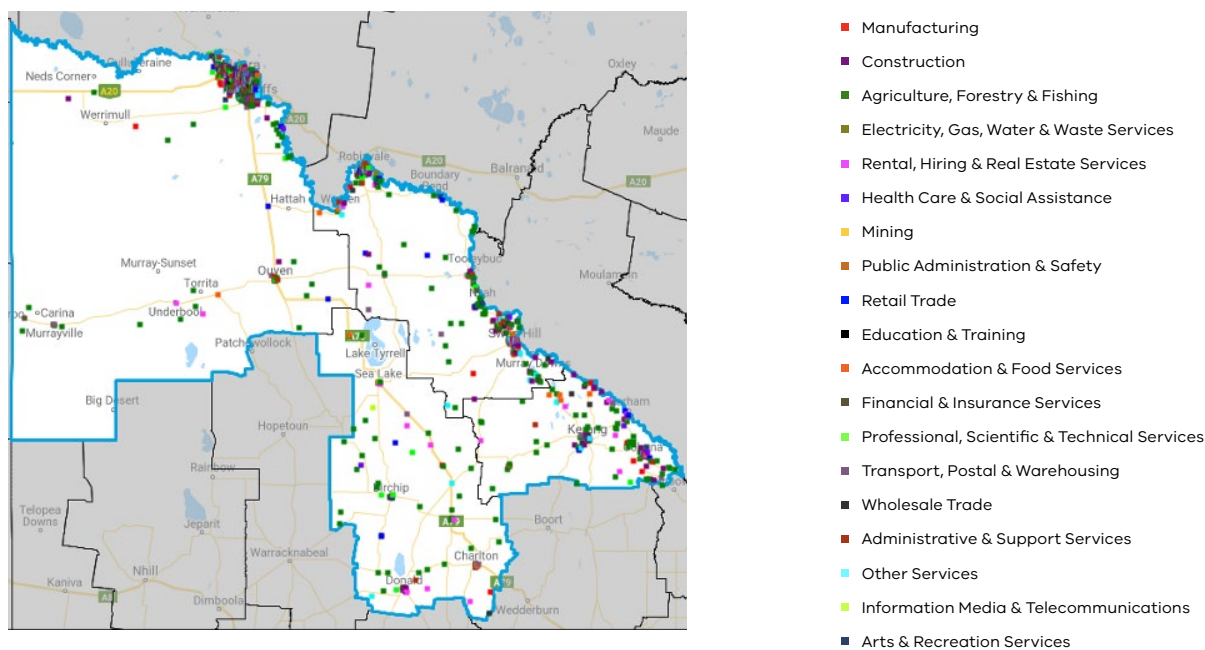
- Administrative and Support Services (225 new businesses),
- Retail Trade (155 new businesses),
- Professional, Scientific and Technical Services (146 new businesses), and
- Other Services (144 new businesses).

Among subindustries, significant business growth has occurred among:

- Labour Supply Services (145 new businesses),
- Non-Residential Property Operators (72 new businesses),
- Road Freight Transport (63 new businesses), and
- House Construction (55 new businesses).

Note that business growth does not indicate the size of businesses.

Figure 1.1.12: Business Entries (September 2015 to September 2020)



Source: (REMPLAN, 2021)

International Exports⁶

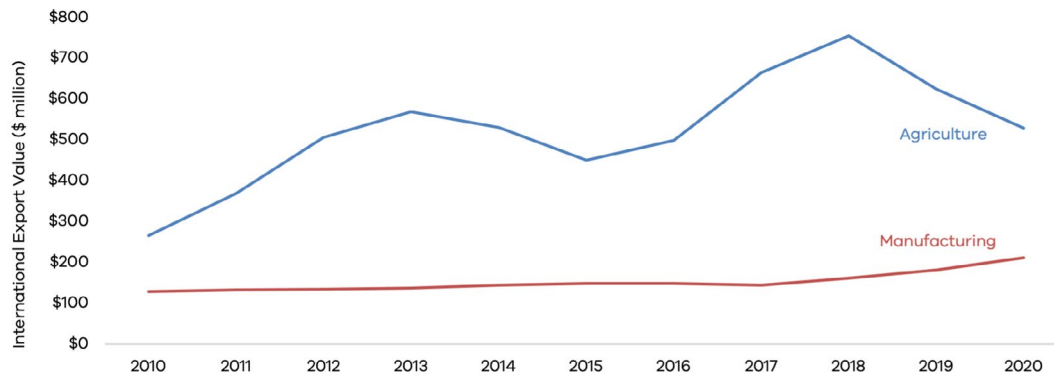
Despite its remote location, the region is well serviced by the Calder Freeway, Murray Valley Highway and Sturt Highway. These three major freight routes form part of a road network which lead to air- and seaports in Melbourne and Adelaide, and therefore connect the region with international markets. Despite yearly fluctuations, the region’s international export value has realised strong growth over the past decade, totalling \$906.6 million in 2020, up from \$532.0 million in 2010.

Representing 58.4 per cent of total value in 2020, agricultural products are driving growth, peaking at \$756.1 million in value in 2018 (see Figure 1.1.13). Nuts, grains (including cereals, pulses, legumes, and oilseeds), and table grapes are the region’s most valuable agricultural products. China, Hong Kong, and India are Victoria’s biggest markets for nuts and table grapes while China, Indonesia and Vietnam are top grain markets. Agricultural export value has declined since 2018 due largely to the impact of drought and record-high water prices, and subsequently exacerbated by the COVID-19 pandemic and China’s imposition of trade restrictions on key Australian commodities, including barley and wine.

Manufacturing is the region’s second largest export industry; contributing \$211.6 million in export value in 2020. Food Product Manufacturing has driven the industry’s stable growth over the past decade; in 2020 it represented 67.6 per cent of industry export value. The region is serviced by food processing centres in Mildura and Swan Hill.

The two major sectors comprised 81.7 per cent of total export value in 2020. Other smaller but relatively significant sectors are Accommodation and Food Services (worth \$41.5 million in export value in 2020), Wholesale Trade (worth \$33.2 million) and Transport, Postal and Warehousing (worth \$21.4 million).

Figure 1.1.13: International Export Value, Key Industries



Sources: (NIEIR, 2020)

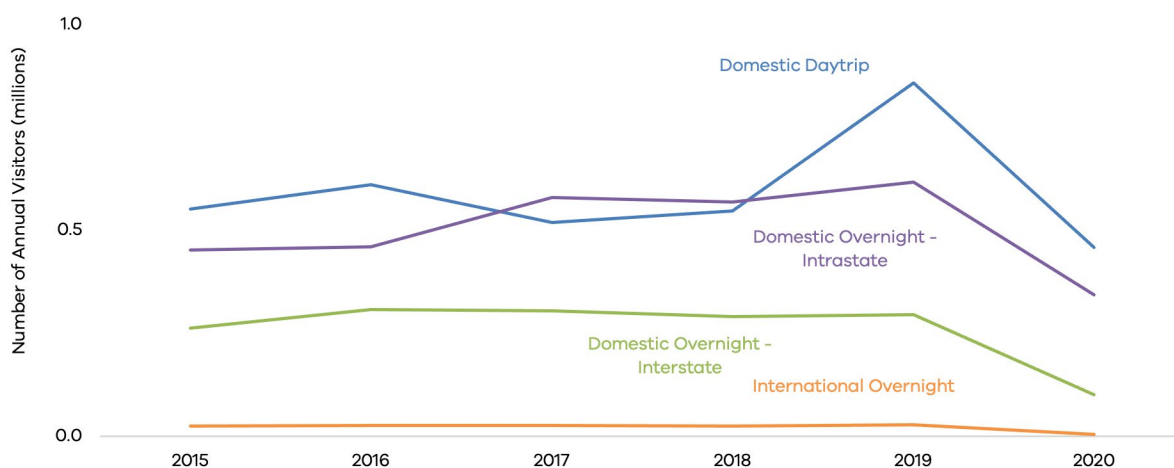
Note: due to its strength and relative importance, the Agriculture subindustry has been represented and discussed rather than the broader Agriculture, Forestry and Fishing industry.

6. International Exports regional insights sources: (NIEIR, 2020), (Geelong Port, 2021), (Agriculture Victoria, 2018a), (Agriculture Victoria, 2018b) and (Agriculture Victoria, 2018c)

Visitor Economy

The region’s various natural and cultural attractions, including the Murray River and Lake Tyrrell, make tourism a significant contributor to the regional economy. Prior to COVID-19, visitation numbers and expenditure were slowly growing year-on-year, peaking in 2019 (see Figure 1.1.14). Domestic daytrips and domestic intrastate overnight visitors have been the most common categories of visitation. However, restrictions associated with COVID-19 including international and state border closures, stay-at-home orders and density limits have significantly impacted the region’s visitor economy in 2020. Located on the tri-state border with New South Wales and South Australia, border closures have been particularly impactful for the region. The total number of domestic daytrip, and domestic and international overnight visitors halved from 1.8 million in 2019 to 908,000 in 2020. This 49.5 per cent decline is the highest among Regional Partnership regions and led to a fall in total visitor expenditure; from \$551 million in 2019 to \$277 million in 2020. Despite the easing of restrictions and vaccine rollout, the pandemic is likely to have lasting effects on visitation patterns to the region.

Figure 1.1.14: Visitation Overview (2015–2020)⁷



Source: (Tourism Research Australia, 2021a)

The number of international overnight and domestic interstate overnight visitors have fallen by 81.7 per cent and 65.8 per cent respectively, significantly more than the declines in domestic day trippers (46.6 per cent) and domestic intrastate visitors (44.4 per cent). Representing 16.4 per cent of total visitation in 2019 and 11.1 per cent in 2020, the region relies on domestic interstate overnight visitation more than any other Regional Partnership region.

As Australia’s vaccine rollout progresses and international travel is more limited, the region has the opportunity to capture tourism demand from those seeking to substitute overseas holidays. To a certain extent, the region is already realising these benefits; average visitor spend is higher in 2020 than 2019 among domestic overnight tourists, and length of stay is also higher for domestic intrastate overnight visitors. Since the region shares borders with New South Wales and South Australia, it is well positioned to attract higher spending and longer staying domestic overnight visitors. However, with other parts of Australia also seeking to meet tourist demand, the region faces competitiveness challenges due to its remoteness from major urban hubs.

7. From 2021, tourism data for Regional Partnership regions are defined based on SA2 boundaries while prior data is based on LGA boundaries therefore estimates may slightly differ.

Table 1.1.15: Visitation & Average Spend (2019–2020)⁸

	Number of Visitors		Average Visitor Spend	
	2019	2020	2019	2020
Domestic Daytrip	859,000	459,000	\$161	\$156
Domestic Intrastate Overnight	618,000	343,000	\$416	\$448
Domestic Interstate Overnight	295,000	101,000	\$382	\$458
International Overnight	28,000	5,000	\$1,531	\$958

Source: (Tourism Research Australia, 2021a)

Most of the region's tourism businesses are small enterprises. In 2019, there was 1,090 tourism businesses across the region. Of these, 74.8 per cent have four employees or fewer, with 36.9 per cent sole proprietors. Just 4.1 per cent of businesses have 20 or more employees.

Table 1.1.16: Average Number of Tourism Businesses (2016–2019)

Local Government Area	Tourism Businesses
Buloke	84
Gannawarra	125
Mildura	623
Swan Hill	258
Total	1,090

Source (Tourism Research Australia, 2021)

8. From 2021, tourism data for Regional Partnership regions are defined based on SA2 boundaries while prior data is based on LGA boundaries therefore estimates may slightly differ.



1.2 Demographic Profile

Over the past 20 years, the Mallee has experienced slow population growth relative to regional Victorian averages. Notwithstanding the impacts of COVID-19, this trend is expected to continue.

- Consistent with economic performance, the areas realising strongest gains are found in Mildura and other areas proximate to the Murray River. Most of the rest of the region are experiencing population declines.
- All LGAs are experiencing outflows of residents to other parts of Australia and several rely on inflows of overseas migrants to support population growth.
- The enduring nature of population changes due to COVID-19 are yet to be determined and as such, the impact on economic activity yet to be fully understood.

The region experiences significant outflows of working age residents, particularly among young people (aged 15 to 24 years).

- This trend is contributing to an ageing population and is likely to impact availability of labour for supporting economic activity.
- It is unclear how migration trends, including international and domestic inflows and outflows will be impacted as the regions emerges from the COVID-19 pandemic.

Population and population growth

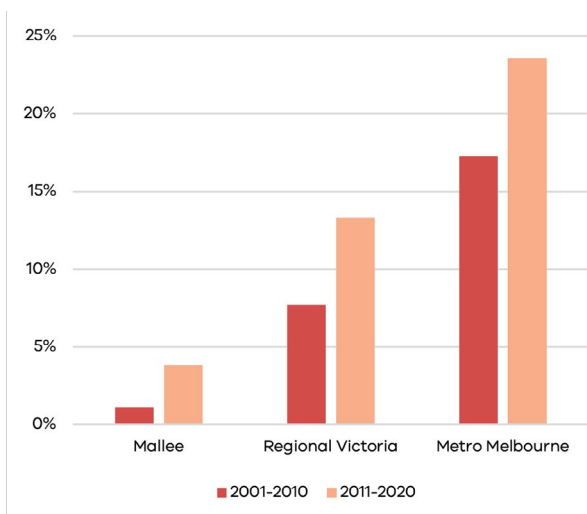
In 2020, Mallee was home to an estimated resident population of 92,972 people. 55,937 (60 per cent) are in the rural city of Mildura; 20,534 (22 per cent) in the rural city of Swan Hill; 10,400 (11 per cent) in Gannawarra Shire; and 6,101 (7 per cent) in Buloke Shire.

Mallee’s population grew by 1.1 per cent between 2001 and 2010 and by 3.8 per cent between 2011 and 2020 (see Figure 1.2.1). Over the past decade, the rate is approximately a third of the growth realised across regional Victoria over each of the periods, and approximately a sixth of the growth realised in metropolitan Melbourne.

The Mallee’s population was forecast to continue to grow at a subdued pace, however, the impacts of COVID-19 on domestic and international migration is likely to alter previous forecasts (see Figure 1.2.2).

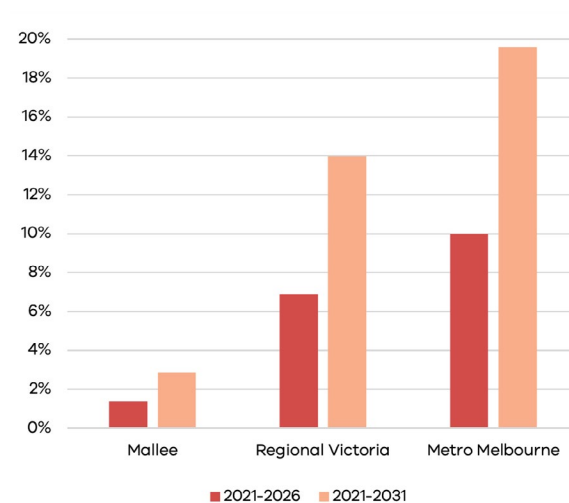
Across LGAs, Mildura has experienced steady population growth which, notwithstanding COVID-19 impacts, was expected to continue. In comparison, Buloke and Gannawarra have seen slight population declines, while population levels in Swan Hill have been stagnant (see Figure 1.2.3).

Figure 1.2.1: Population Growth



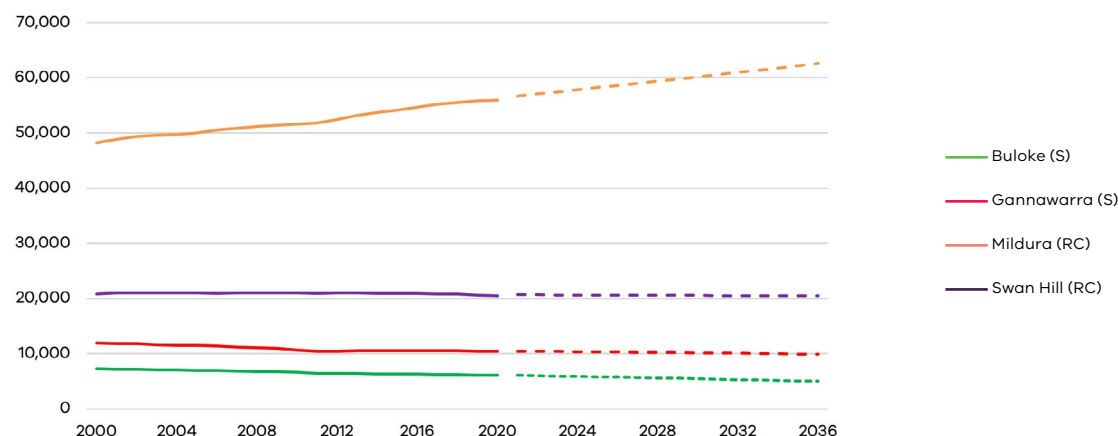
Source: (Australian Bureau of Statistics (ABS), 2020a)

Figure 1.2.2: Population Forecast



Source: (Department of Environment, Land, Water and Planning (DELWP), 2019)

Figure 1.2.3: Population Growth by LGA (2000–2036)



Source: (Australian Bureau of Statistics (ABS), 2020a) (Department of Environment, Land, Water and Planning (DELWP), 2019)

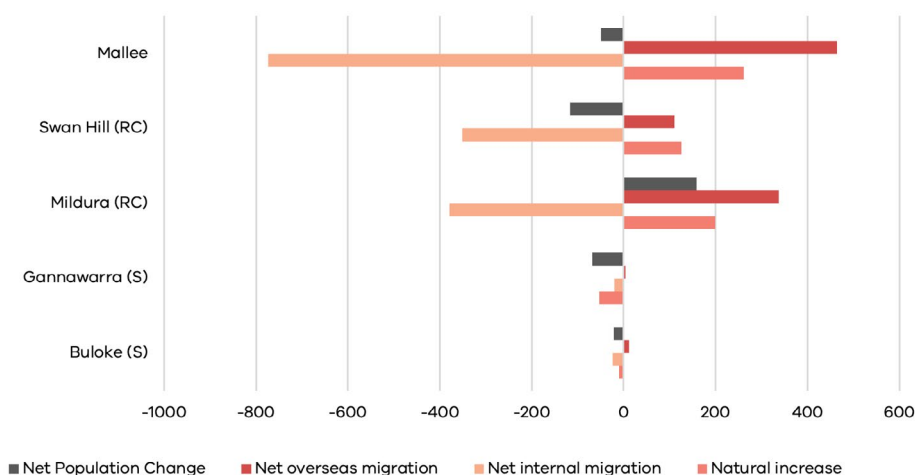
Components of population change

Between 2019-20, population decline in the Mallee has been driven by a significant outflow of residents (net internal migration (NIM)). At an aggregated level, these declines have been partly offset by inflows of overseas migrants (net overseas migration (NOM)) and by natural increases (see Figure 1.2.4).

Due to a significant inflow of overseas migrants and a natural increase, Mildura is the only LGA which experienced population growth. Swan Hill exhibits trends consistent with the region; population declines due to outflows of residents despite natural increases and inflows of overseas migrants. Meanwhile, Gannawarra and Buloke are also experiencing natural decreases (greater deaths than births) which is contributing to a slow but steady decline in population.

Population change across the region is varied. As government and local leaders plan for growth, it is important to recognise that the magnitude and drivers substantially differ across the region’s LGAs, and therefore policy responses should vary. Furthermore, the impacts of COVID-19 are likely to be differentially experienced across regional communities.

Figure 1.2.4: Population Change by Components (2019–2020)



Source: (ABS, 2021)

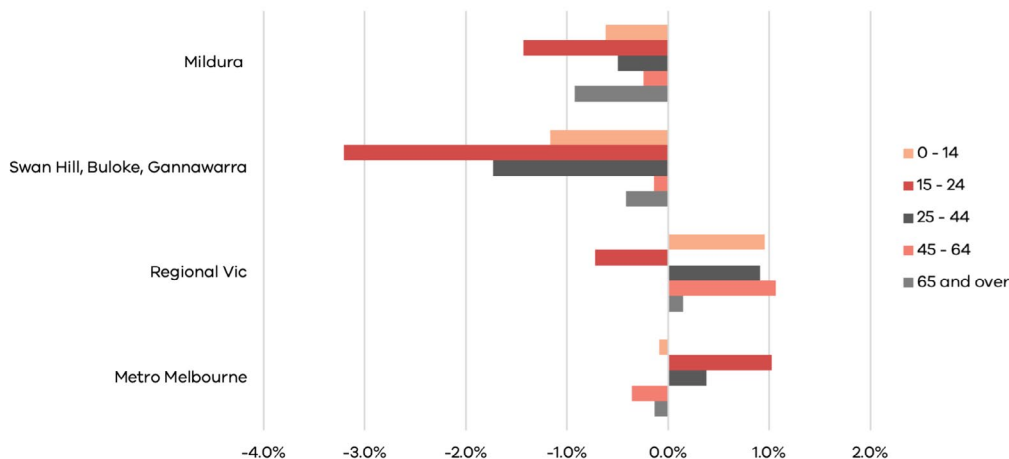
Regional internal migration

Annual internal migration data indicates that the key driver of declining population is the significant outflow of younger people (aged 15 to 24 years) leaving the region (see Figure 1.2.5). The proportion of young people leaving the area is higher among smaller LGAs, however all areas have experienced greater proportions leave than average across regional Victoria.

Unlike trends across regional Victoria, all LGAs in the Mallee have also realised outflows of residents. This is particularly striking in terms of net outflows of people aged 0 to 14 years, 25 to 44 and 45 to 64 years, where regional Victoria typically experiences healthy net increases.

The consistent outflows across age brackets suggests that a diverse range of factors may be contributing to the people movement.

Figure 1.2.5: Net Internal Migration (Proportion by Age Group), Annual Average (2016–2019)



Source: (ABS, 2020b)

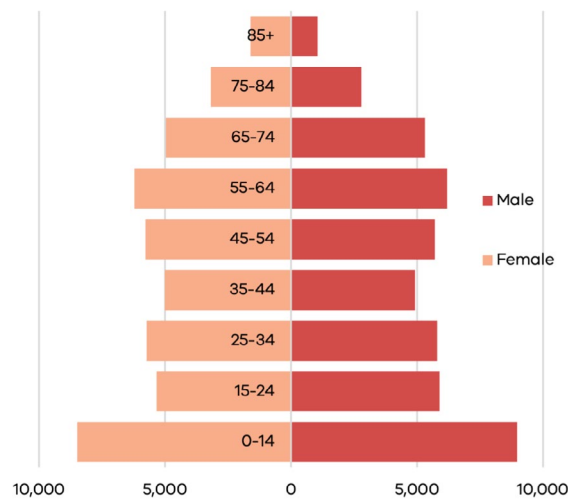
Note: data indicates average migration as a proportion of 2016 population by age group. Data refers to domestic / internal migration in Australia. Note: the ABS time series of internal migration is broken at 2016 to align with new statistical regions. 2016–18 insights are consistent with the movements represented in previous statistical regions where alignment is possible.

Note: where relevant, LGAs have been grouped to most closely match the 2016 ABS statistical region (at SA3 level) for this measure of regional internal migration. The Murray River-Swan Hill SA3 captures the LGAs of Buloke, Gannawarra and Swan Hill.

Population cohort analysis

The Mallee’s population is 49.8 per cent female and 50.2 per cent male. With a median age of 42 years, the Mallee aligns with that of regional Victorian (42 years) but older than that of metropolitan Melbourne (36 years). The working aged population (15 to 64 years) comprises 60.9 per cent of the population, while 20.4 per cent of the population is aged 65 years or older (see Figure 1.2.6). Outflows of the working age population and a significant 55 to 64 years age cohort suggests that the proportion of older residents will increase.

Figure 1.2.6: Population by Age

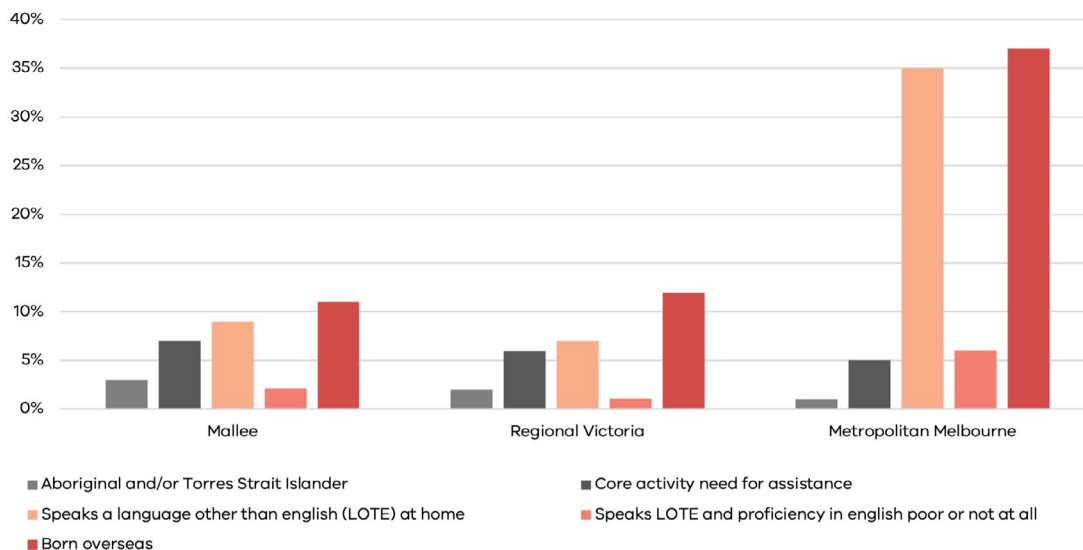


Source: (ABS, 2020c)



3.5 per cent of the region’s population are Aboriginal and Torres Strait Islander, the highest proportion among Regional Partnership regions, while 7.2 per cent live with a disability. For a regional area, the Mallee has a relatively large culturally and linguistically diverse (CALD) population; 9.5 per cent of the population speak a language other than English at home, 2.0 per cent speak a language other than English with poor to no proficiency in English and 11.2 per cent are born overseas. All these measures exceed regional Victorian averages but are significantly lower than metropolitan Melbourne averages (see Figure 1.2.7).

Figure 1.2.7: Population Cohorts



Source: (ABS, 2016a)

1.3 Socio-Economic Profile

Overall trends in employment, output and population have been varied across geographies and cohorts.

- In terms of household incomes, socio-economic disadvantage and educational attainment, the Mallee tends to underperform regional Victorian averages.
- While residents in Buloke and Gannawarra have lower levels of educational attainment and lower incomes than those in Mildura and Swan Hill, the rural municipalities have lower levels of disadvantage.
- Relative to the general population rates in the Mallee, local Aboriginal and Torres Strait Islanders have poorer outcomes across labour force engagement and income measures.

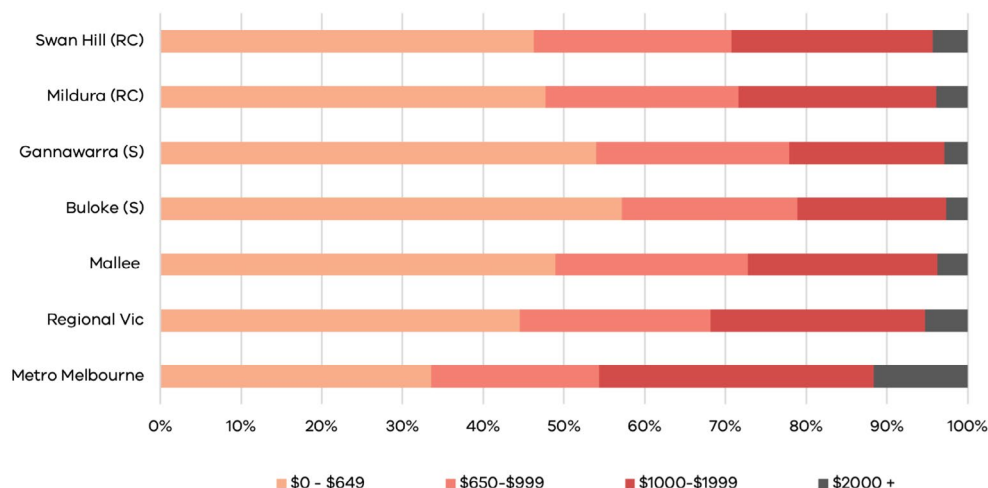
Variable performance across the region indicates that there remain significant opportunities to improve educational attainment, engage disadvantaged cohorts and lift wages.

Income

Relative to the rest of regional Victoria, the Mallee has low household incomes. Exceeding averages in regional Victoria (45 per cent) and metropolitan Melbourne (34 per cent) averages, 49 per cent of households earn below \$650 per week. Furthermore, only 27 per cent of homes earn over \$1,000 per week, which is below the regional average (32 per cent) and significantly below metropolitan Melbourne (46 per cent).

At an LGA level, Mildura and Swan Hill have incomes distributions which are substantially higher than Gannawarra and Buloke. The latter two tend to have a high proportion of low- and low-medium income households (see Figure 1.3.1).

Figure 1.3.1: Household Income Distribution (Weekly)



Source: (ABS, 2016b)

Education attainment

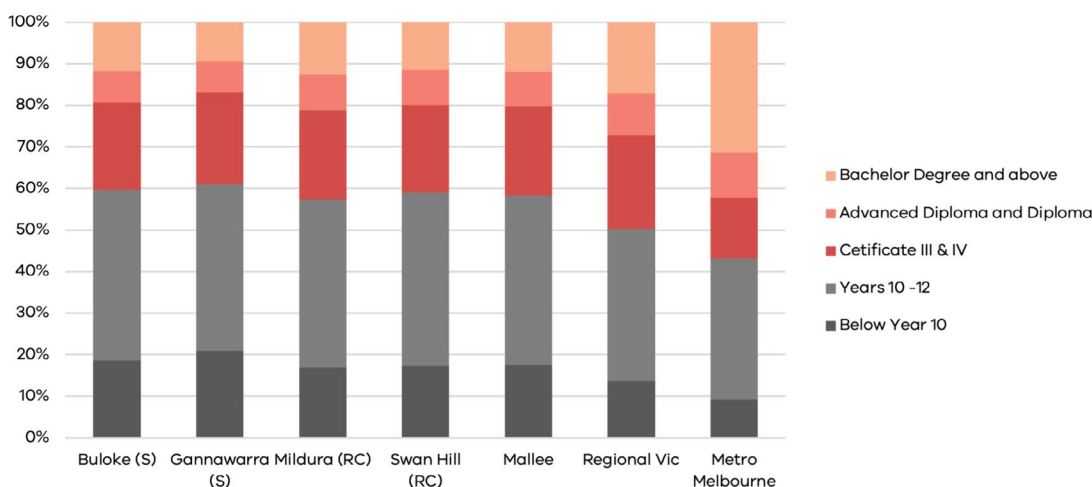
Broadly speaking, educational attainment in the Mallee is lower than regional averages (see Figure 1.3.2). 58 per cent of the region’s residents have not progressed beyond secondary school level education. This is almost ten percentage points higher than the regional average.

Among LGAs, residents in Gannawarra have the lowest levels of education attainment with 21 per cent of the population not progressing beyond Year 9 and only 9 per cent having a bachelor’s degree or higher qualification.

Mildura residents have the highest levels of educational attainment in the Mallee with 13 per cent of the population having bachelor’s degree or higher. While it is likely that this trend reflects the educational and employment opportunities available in the regional centre, the municipality underperforms regional averages.

While the Mallee’s low level of educational attainment is likely to reflect the qualification levels required for many of the region’s major employing industries, it also creates thin labour markets. This makes it difficult for employers to fill specialised roles to support socioeconomic development in the region. These roles include, but are not limited to: General Practitioners, Allied Health professionals, Irrigation Managers, Agronomists, Engineers and Accountants. In addition, employers of high-volume roles are forced to compete for scarce local labour. Both cases inhibit regional growth and development.

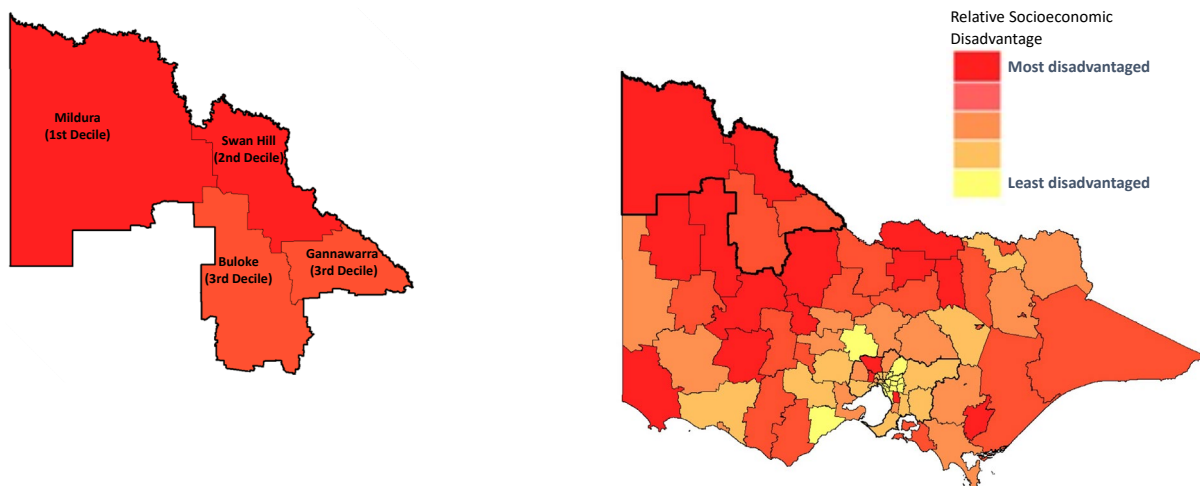
Figure 1.3.2: Educational Attainment (Highest Level)



Source: (ABS, 2016c)

Socio-economic Disadvantage

Map 1.3.3: Index of Relative Socio-economic Disadvantage (IRSD) Rankings (2016)



Source: (ABS, 2016d)

The Index of Relative Socio-economic Disadvantage (IRSD) is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area. The index provides an overall measure of the degree to which circumstances are unfavourable to socio-economic wellbeing and prosperity. It is calculated as part of the ABS Socio-economic Indexes for Areas (SEIFA) released with each Census.

The Mallee is among the most disadvantaged regions in the state. Of the four LGAs in the Mallee, only Buloke does not sit among the 20 most disadvantaged Victorian municipalities.

Across the region, relative levels of disadvantage have largely remained stable over time. However, Buloke and Swan Hill have realised slight improvements in relative levels of disadvantage between 2011 and 2016 (see Table 1.3.4).

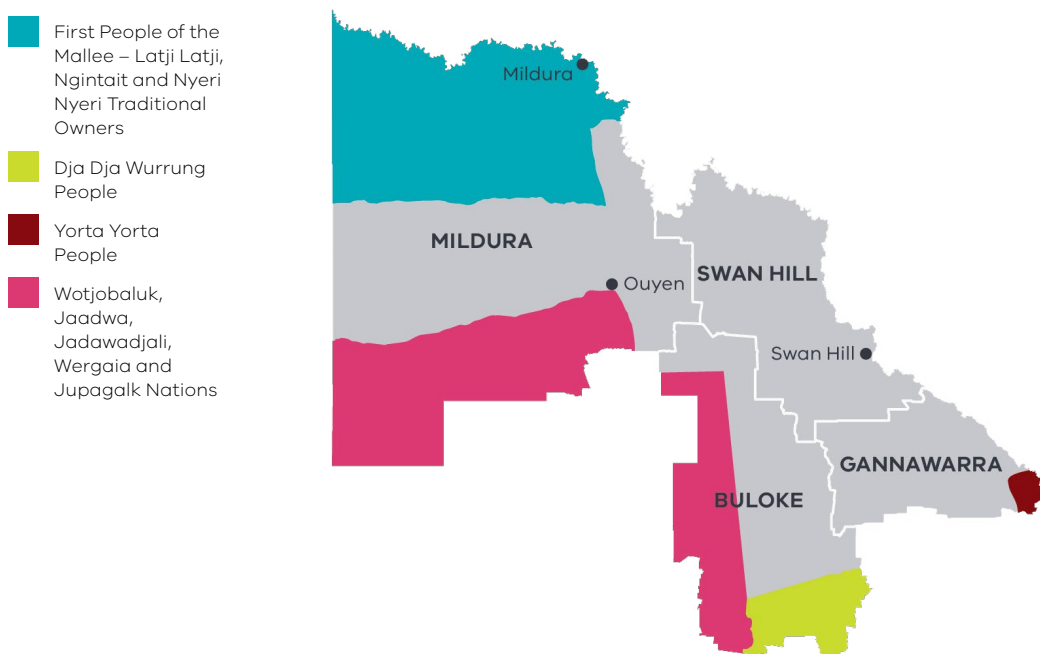
Table 1.3.4: LGA Relative IRSD Rankings (2011 and 2016)

Local Government Area	2016 Rank (of 80)	2016 Decile	2011 Rank (of 80)	
Mildura (RC)	5	1	5	=
Swan Hill (RC)	11	2	10	▼
Gannawarra (S)	18	3	18	=
Buloke (S)	24	3	22	▼

Sources: (ABS, 2016d) (ABS, 2011)

Aboriginal local communities and Traditional Owners

Figure 1.3.5 illustrates the Traditional Owner groups present in the region.



(First Peoples State Relations, June 2021)

Aboriginal and Torres Strait Islanders⁹

Table 1.3.6 (below) indicates a range of measures which compares socio-economic outcomes for the broader Victorian population and for Aboriginal and Torres Strait Islanders. It shows that in each of the categories, the local Aboriginal and Torres Strait Islander population is more disadvantaged.

With a 21.0 per cent unemployment rate, Aboriginal and Torres Strait Islanders in the Mallee are over three times more likely to be unemployed than the region’s average.

The labour force participation rate among Aboriginal and Torres Strait Islanders (49.6 per cent) is more than ten percentage points lower than average and Aboriginal and Torres Strait Islander households are more likely to earn less than \$650 per week (65.4 per cent) than average (48.0 per cent).

Furthermore, 30.1 per cent of Aboriginal and Torres Strait Islander youth in the Mallee are not engaged in work or study. This is significantly higher than the average rate (12.8 per cent).

9. Cohort analysis includes all persons who identified as Aboriginal and/or Torres Strait Islander in the region on Census night 2016.

Table 1.3.6: Aboriginal and Torres Strait Islander Analysis

Category	Measure	Victoria	Regional Victoria	Metro Melbourne	Mallee
Economic performance	Labour force participation rate (%)	64.5% ▣	60.9% ▣	65.8% ▣	60.3% ▼
	<i>Aboriginal and Torres Strait Islander Victorians</i>	57.8% ▣	52.8% ▣	62.4% ▣	49.6% ▼
	Unemployment rate (%)	6.6% ▲	5.9% ▲	6.8% ▲	6.3% ▲
	<i>Aboriginal and Torres Strait Islander Victorians</i>	13.9% ▣	16.5% ▣	11.8% ▣	21.0% ▼
Disadvantage and shared prosperity	Households earning less than \$650 per week (2016 dollars) (%)	34.8% ▼	43.1% ▼	31.8% ▼	48.0% ▼
	<i>Aboriginal and Torres Strait Islander households</i>	47.7% ▼	56.6% ▼	39.2% ▼	65.4% ▼
	Children in jobless households (%)	16.4% ▣	16.5% ▣	16.3% ▣	19.5% ▣
	<i>Aboriginal and Torres Strait Islander children in jobless households</i>	36.3% ▼	40.9% ▼	31.4% ▼	
Cohesive and liveable communities	People aged 15+ who volunteer (%)	20.9% ▲	26.7% ▲	18.9% ▲	27.4% ▣
	<i>Aboriginal and Torres Strait Islander Victorians</i>	19.9% ▲	19.5% ▲	20.3% ▲	16.7% ▲
Skills and education	People aged 15–24 not engaged in work or study (%)	8.6% *	11.3% *	7.9% *	12.8% *
	<i>Aboriginal and Torres Strait Islander Victorians</i>	21.7% *	25.0% *	18.6% *	30.1% *

Notes: All figures were calculated by aggregating Regional Partnership level data, to allow for comparison between each figure. Accordingly, figures for Victoria, Regional Victoria and Metro Melbourne may differ from headline figures used by the Victorian Government.

Trend

(over five years, unless noted otherwise in the Data Dictionary):

▲ or ▼ **Favourable trend** – average annual movement of 1.0% or more

▣ **Stable trend** – average annual movement of less than 1.0%

▲ or ▼ **Unfavourable trend** – average annual movement of 1.0% or more

* Trend not calculated as comparable time series data was unavailable.

Shading

(not applied where comparison between regions is uninformative):

▣ More favourable than the corresponding regional Vic average – by 5.0% or more

▣ Similar to the corresponding regional Vic average – difference is less than 5.0%

▣ Less favourable than the corresponding regional Vic average – by 5.0% or more

(ABS Census, 2016)

1.4 Labour Market

Despite a low unemployment rate, the region’s below average participation rates, particularly among women, suggests that the Mallee has latent labour capacity.

- Employment growth has been sluggish over the last decade, however growth has started to improve in recent years.
- By boosting investment and employment opportunities, there is significant scope to improve labour productivity, lift participation rates and create more full-time jobs.
- Similarly, employers in the region have significant demand for key occupations which are not being met by the local labour force or produced from local educational institutions.

While 72 per cent of the region’s workforce is spread across seven industries, the region’s workforce remains highly concentrated in Agriculture, Forestry and Fishing. This can make the region and workforce susceptible to agriculture shocks and industry transformations.

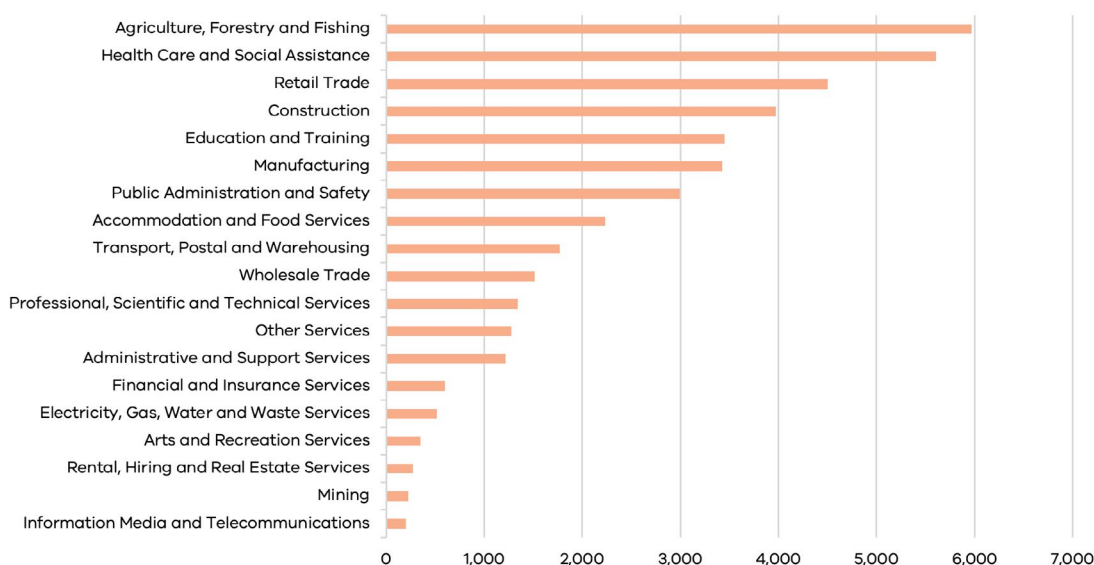
- The Construction, Health Care and Social Services and Professional, Scientific and Technical Services industries have driven the increase in employment in the last ten years. Continued growth will increase demand for a skilled workforce.

Across the region, local jobs tend to be filled by workers from within the municipality, but a number of workers commute into neighbouring regions. This is particularly evident in Mildura, which sees significant cross-border labour movements into New South Wales.

Employment¹⁰

In 2020 there were 41,441 employed persons (see Figure 1.4.1) in the Mallee. Agriculture Forestry and Fishing (5,972 workers) was the largest employing sector, followed by Health Care and Social Assistance (5,609 workers) and Retail Trade (4,500 workers). The top seven employing industries account for just over 72 per cent of the region’s workforce. Among subindustries, Agriculture is the largest employing, accounting for 14 per cent of the region’s total employment and 96 per cent of Agricultural, Forestry and Fishing sector’s total employment (see Figure 1.4.1).

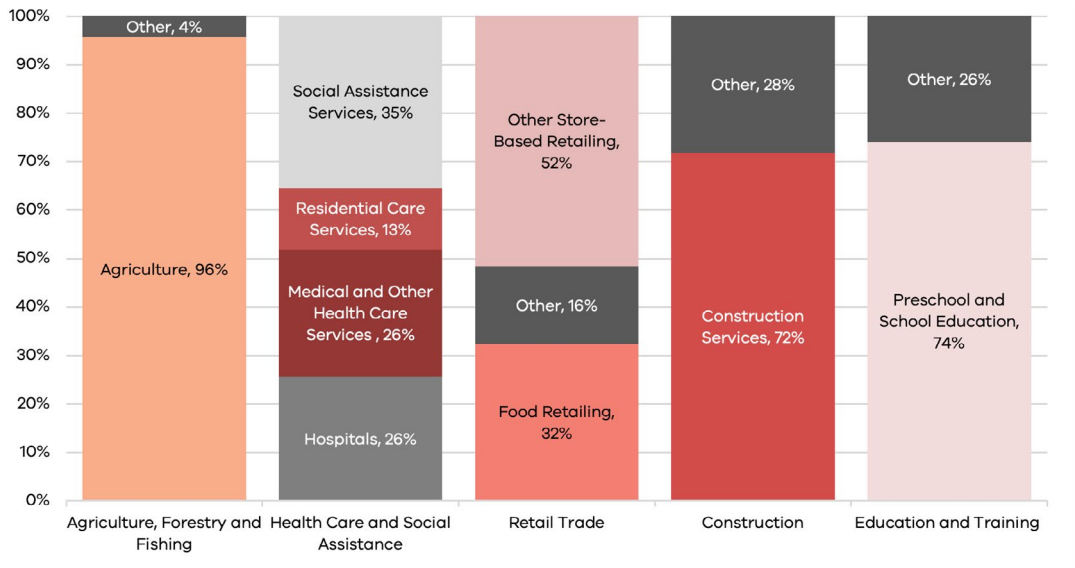
Figure 1.4.1: Employment by Industry



Source: (NIEIR, 2020)

10.Labour Market insights have used employment data by place of Usual Residence. Usual Residence refers to the area where a person usually lives regardless of where they were on Census night. This has been done to capture insights in the workforce who reside in the region. Journey to Work employment data has been used elsewhere in the supporting analysis and strategies as a measure of industry presence in a region. There will be small discrepancies between the two particularly in peri-urban regions where commuter patterns into Melbourne are higher.

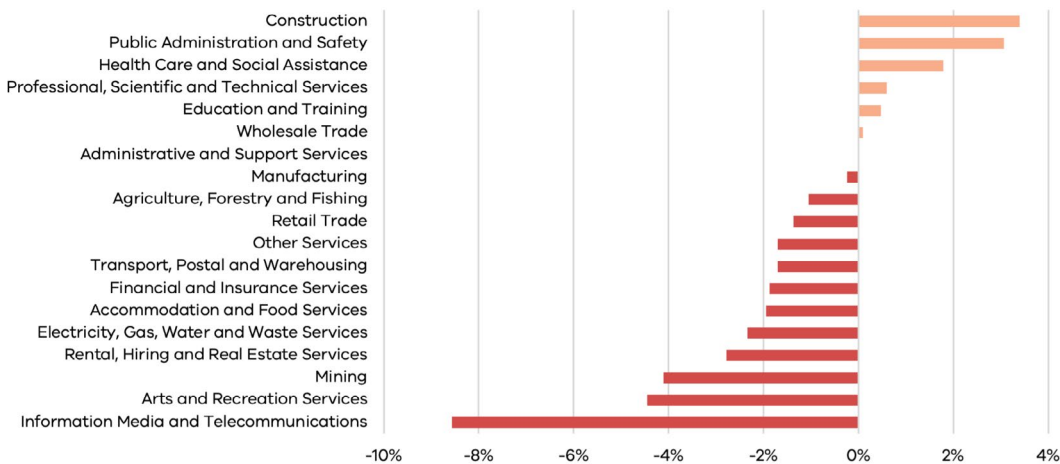
Figure 1.4.2: Subindustry Employment (Proportion of Top 5 Industries)



Source: (NIEIR, 2020)

Over the past ten years, employment declined by an average rate of 0.1 per cent. This growth is significantly lower than regional Victoria (1 per cent growth) and metropolitan Melbourne (2.1 per cent growth) (see Figure 1.4.3). However, consistent with economic output trends, the Mallee has realised strong growth over the past three years. Growth has been driven by Construction, Public Administration and Health Care and Social Assistance employment in the region.

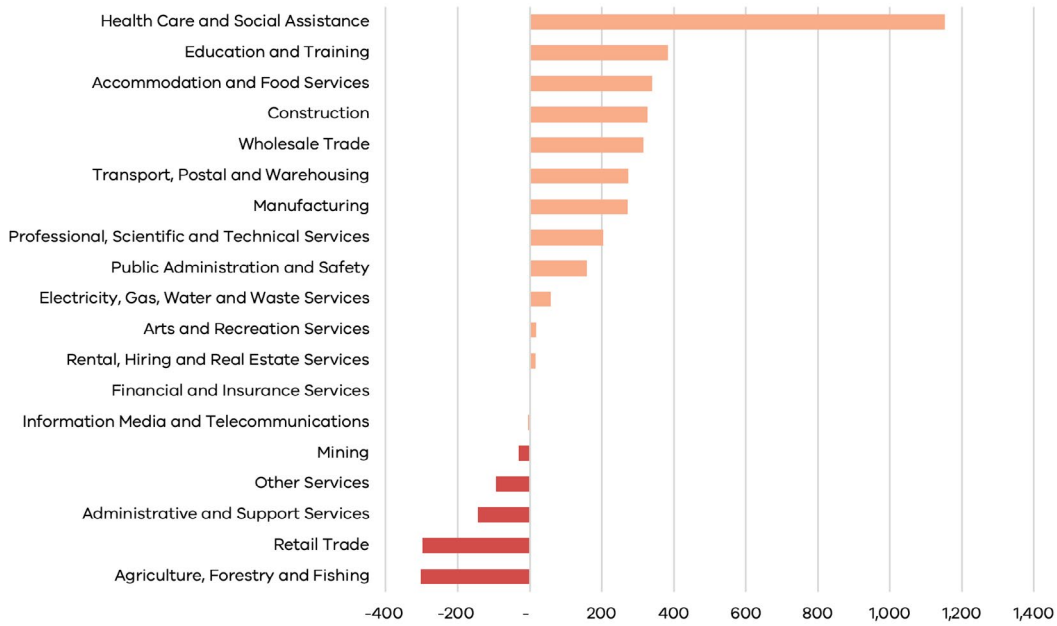
Figure 1.4.3: 10-year Average Annual Growth Rate (2011–2020)



Source: (NIEIR, 2020)

Pre-COVID projections (see Figure 1.4.4) forecast employment to increase by 3.8 per cent over the next five years. This growth was expected to be driven by employment in Health Care and Social Assistance, and, to a lesser extent, Education and Training. The largest fall in employment was predicted to be realised in the Agriculture, Forestry and Fishing and Retail Trade industries.

Figure 1.4.4: Projected change in employment, Victoria — North West SA4, 2019–2024



Source: (National Skills Commission, 2020)

In the Mallee, 32 per cent of the workforce work part time (see Figure 1.4.5). This is lower than the average rate across regional Victoria (35 per cent) and slightly lower than metropolitan Melbourne (32 per cent).

Figure 1.4.5: Composition of Employment (2020)



Source: (NIEIR, 2020)

Unemployment rate

Over the past ten years, the unemployment rate in the Mallee has been considerably more volatile than that of regional Victoria and metropolitan Melbourne (see Figure 1.4.6).

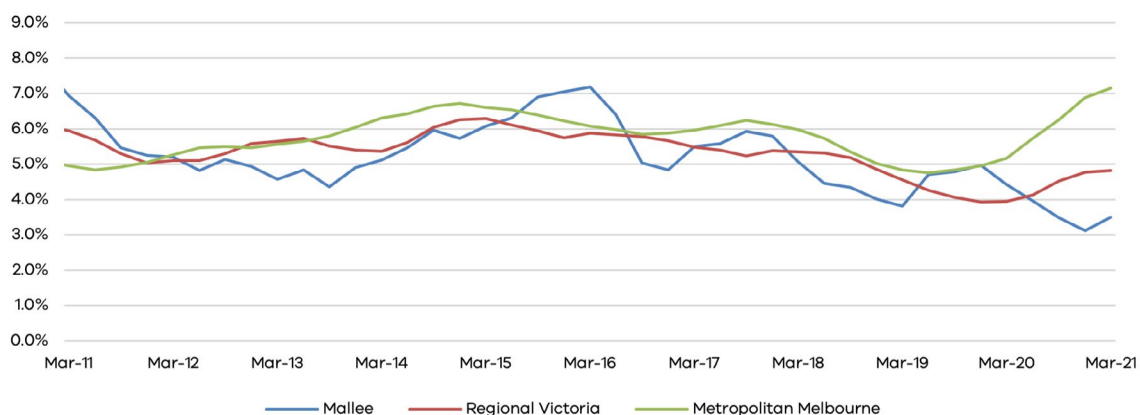
Prior to the onset of the COVID pandemic (March quarter 2020), the unemployment rate in the region was 4.4 per cent. This was above the unemployment rate in regional Victoria (3.9 per cent), however below metropolitan Melbourne (5.2 per cent).

The region’s long-term unemployment rate (December Qtr 2010 to March Qtr 2021) is 5.2 per cent; just below that of regional Victoria (5.3 per cent) and below metropolitan Melbourne (5.8 per cent).

Unemployment rate estimates since COVID has seen the unemployment rate in the region decline to 3.5%, well below the regional average.

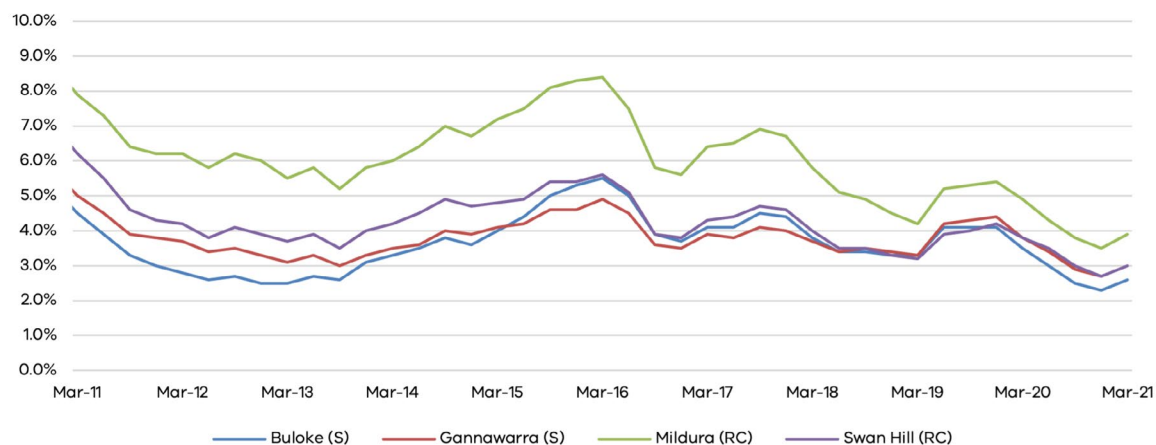
The downward trend in unemployment over time have been relatively consistent across municipalities, as Mildura maintained the region’s highest level of unemployment and Buloke, Swan Hill and Gannawarra retained similar, lower rates of unemployment.

Figure 1.4.6: Unemployment Rate (2011–2020)



Source: (National Skills Commission, 2021)

Figure 1.4.7: Unemployment Rate, LGA Comparison



Source: (National Skills Commission, 2021)

Participation rate

The labour force participation rate in the Mallee (60.3 per cent) is lower than both regional Victoria (60.9 per cent) and metropolitan Melbourne (65.8 per cent) (see Figure 1.4.8). The Mallee slightly underperforms regional averages across all age groups with the exception of people aged above 55 years (see Figure 1.4.9).

Figure 1.4.8: Participation Rate (2016)

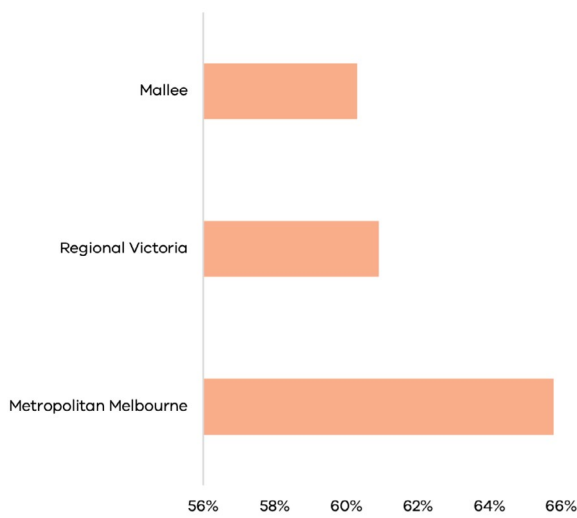
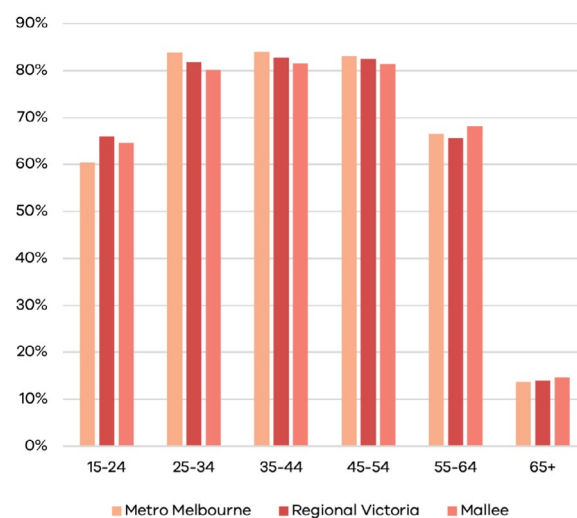


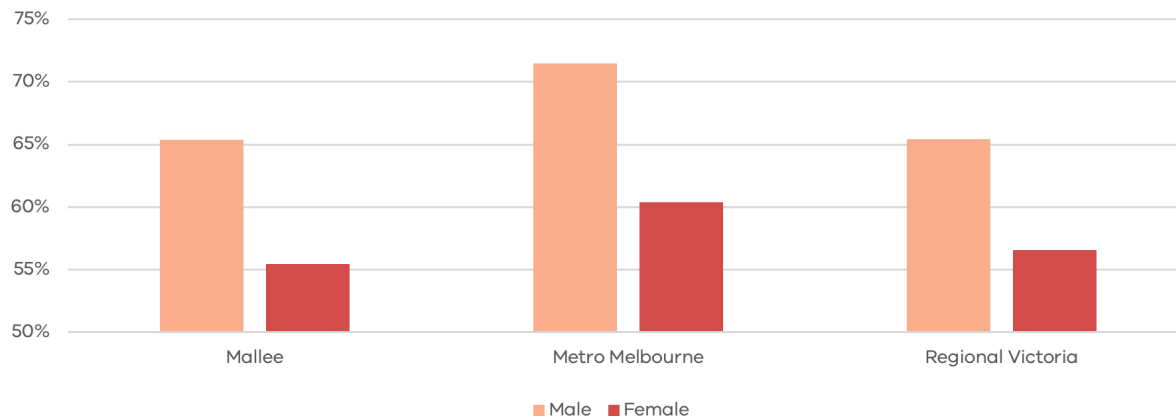
Figure 1.4.9: Participation Rate Age Comparison



Source: (ABS Census, 2016)

Consistent with the pattern across the state, the female labour force participation rate in the Mallee (55.5 per cent) is significantly lower than the male participation rate (65.4 per cent) (see Figure 1.4.10). This presents an opportunity to boost future economic growth if participation rates among women could be lifted and employment opportunities found.

Figure 1.4.10: Participation Rate by Gender (2016)



Source: (ABS Census, 2016)

Labour Productivity (Gross Regional Product (GRP) per worker)

Since 2001, Mallee’s labour productivity has declined (see Figure 1.4.11). Most significantly, the region experienced a substantial fall between 2002 and 2007 likely due to the millennium drought which significantly disrupted the Agriculture sector.

Between 2016 and 2018, improvements in economic conditions and performance saw the region realise productivity increases. This has declined slightly since, however productivity remains higher than 2016 levels.

Across LGAs, Buloke Shire experienced significant falls at the start of the century. In comparison, Gannawarra, Mildura has seen more gradual declines in productivity, whilst Swan Hill has seen growth since 2011. (see Figure 1.4.12).

Figure 1.4.11: Regional Productivity

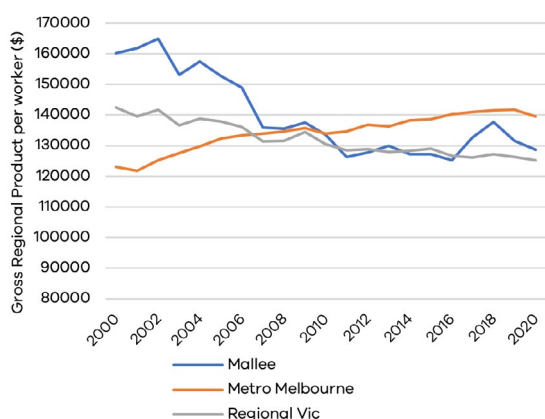
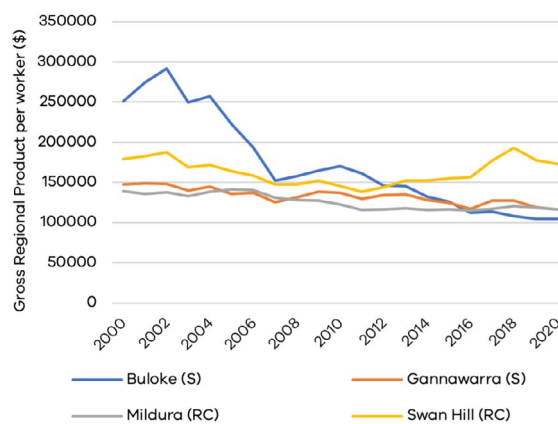


Figure 1.4.12: LGA Productivity



(NIEIR, 2020)

Worker mobility and commuting across regions

An analysis of journey-to-work patterns between LGAs indicates that municipalities within the Mallee are largely self-sufficient. Due to the distance between town centres and proximity of towns to other local government areas, there is little commuting between LGAs for work (see Table 1.4.13).

The exception is the large number of workers moving between Mildura and towns out of the region. Approximately 1,200 Mildura locals work in the neighbouring New South Wales LGA of Wentworth. Meanwhile, Mildura receives approximately 1,100 workers commuting in from Wentworth.

All municipal labour forces in the Mallee are highly self-contained i.e. locals working where they live, and self-sufficient i.e. local jobs filled by the resident labour force. For example, approximately 93 per cent of workers living in Swan Hill work within their home LGA. Similarly, 93 per cent of jobs in Mildura are filled by residents (see Table 1.4.14).

Table 1.4.13: Labour mobility

	Buloke (S)	Gannawarra (S)	Mildura (RC)	Swan Hill (RC)
Total local workers (working anywhere) (UR)	2,480	4,405	22,498	8,565
Number of jobs in local area (POW)	2,445	3,937	21,352	8,802
Number of local jobs held by locals	2,131	3,454	19,754	7,673
Number of locals employed outside LGA	349	951	2,744	892
Employment Self containment	89%	82%	91%	93%
Employment Self Sufficiency	87%	88%	93%	87%

Source ABS, Census 2016

Table 1.4.14: Labour mobility across LGAs

Place of work → Place of residence ↓	Buloke (S)	Gannawarra (S)	Mildura (RC)	Swan Hill (RC)	Outside Mallee
Buloke (S)	2,131	4	3	43	209
Gannawarra (S)	13	3,454	0	186	580
Mildura (RC)	7	0	19,754	160	1,693
Swan Hill (RC)	39	67	44	7,673	469
Outside Mallee	252	406	1,515	736	

Source: (ABS Census, 2016)

Note: The Employment Self-Containment describes the percentage of employed residents who are employed within the boundaries of the LGA. The Employment Self-Sufficiency describes the percentage of local jobs that are filled by local residents for an LGA.

UR: Usual place of residence

POW: Place of work



1.5 Skills

The Mallee's falling employment in low skilled occupations and rising employment in skilled occupations may limit opportunities for low skilled workers.

- The trend is in line with results for regional Victoria which saw employment in skilled occupations increase between 2016 and 2021.
- Occupation skills levels are closely associated with measures of disadvantage such as educational attainment and income levels. Leveraging opportunities to enhance skill levels will support the local community to address pockets of disadvantage and therefore support equitable improvements in economic growth and employment.

Through improved mobilisation of the local labour force and international migrant inflows into skilled and unskilled roles, the region has seen strong employment growth in recent years.

Occupation

In 2021, 27,000 workers in Mallee worked in skilled occupations (62.2 per cent of the local workforce). As a proportion of the total workforce, this is equal to regional Victoria and lower than metropolitan Melbourne (67.3 per cent). In the five years to 2021, the number of skilled workers increased by 700 workers (2.8 per cent), while the number of low skilled workers decreased by 1,700 workers (9.5 per cent). The rising number of skilled workers is consistent with trends across regional Victoria and metropolitan Melbourne, where employment among skilled workers grew by 8.8 per cent and 22.1 per cent respectively.

Crop Farmers was the largest employing occupation in Mallee, followed by Sales Assistants (General) and Registered Nurses. In the five years to 2021, skilled worker decline was most pronounced amongst Farmers. Secondary School Teachers and Primary School Teachers experienced the largest absolute growth in employment over the same time period. Seven of the top ten employing occupations were skilled.

Table 1.5.1: Top 10 employing occupations

Mallee	2021	2016	Change	Skill level ¹¹
Crop Farmers	3,300	3,400	-100	Skilled
Sales Assistants (General)	2,900	2,900	0	Low Skilled
Registered Nurses	1,300	1,200	100	Skilled
Secondary School Teachers	1,300	900	400	Skilled
Primary School Teachers	1,200	800	400	Skilled
Livestock Farmers	1,100	1,200	-100	Skilled
Retail Managers	1,100	900	200	Skilled
General Clerks	1,100	1,100	-100	Low Skilled
Mixed Crop and Livestock Farmers	1,000	1,000	-100	Skilled
Crop Farm Workers	1,000	1,200	-200	Low Skilled

(Department of Education and Training, 2021)

Further data suggests that economic growth since 2017 has led to the creation of almost 2,000 new jobs. This increase has been achieved through the mobilisation of the local labour force and international migrant inflows into skilled and unskilled roles (Nous Group, 2020). Growth estimates indicate that there will be ongoing demand for workers post-COVID which has the potential to lead to future skill shortages. Job and skill demands are projected across a range of sectors with strongest job requirements expected in service industries (Education and Training, Healthcare and Social Assistance), construction and agriculture.

To address potential skill shortages, the region may be required to (1) tackle the structural barriers to attracting and retaining the region's workforce, and (2) better align training and education provision with industry skill demands.

11. Note employment figures rounded to nearest 100. Skill level is defined as a function of the range and complexity of the set of tasks performed in a particular occupation. The greater the range and complexity of the set of tasks, the greater the skill level of an occupation. Skill level is measured operationally by the level or amount of formal education and training, the amount of previous experience in a related occupation, and, the amount of on-the-job training required to competently perform the set of tasks required for that occupation. Skilled workers are defined as being classed between an ANZSCO Skill level of 1-3, while low skilled is classed as 4 or 5.



02 Comparative Advantage

The historical economic performance of a region serves as a good indicator of the industries which have a comparative advantage.

LQ analysis provides useful insights into the region's employment specialisation and business clustering. While insightful, they are only partial measures for understanding regional economies and comparative advantage. Comparative advantages can shift as a result of changes in government policies, new trade agreements and changes in the global economy, such as changing consumption patterns or increasing trade barriers. This analysis should therefore be considered alongside qualitative evaluations to help identify sectors with untapped and growing potential and support those industries to acquire a comparative advantage in the future.

Nonetheless, the analysis in this report provides a consistent picture of the region's revealed comparative advantage. The region has a strong advantage in Agriculture, Forestry and Fishing as represented by both high levels employing specialisation, GVA specialisation, and business clustering.

The drivers behind the comparative advantages of the region are varied and will include local infrastructure, natural resources and proximity to inputs or key markets. A point in time snapshot undertaken by Infrastructure Victoria in 2019 (Mallee, Industry profile, 2019), and built upon by a number of other government analysis found the region has considerable strengths across a range of attributes:

2.1 Transport Infrastructure

Located in the North West of the state, the Mallee is one of the most remote regions in Victoria. The landlocked region is reliant on road and rail connections for trade routes which are important for local agriculture and manufacturing sectors. These networks provide access to Melbourne, Adelaide and Portland and their key ports, airports and economic centres. There is a high degree of interstate connectivity, as it shares borders with South Australia and New South Wales (see Figure 2.2.1).

A regional profile of Mallee completed in 2019 for Infrastructure Victoria identified that key transport infrastructure is centred around the road network, including:

- the Calder Highway which connects Melbourne to Mildura via Bendigo;
- the Sturt Highway which connects Mildura to Adelaide and Wagga Wagga;
- the Mallee highway which connects the southern section of Mallee to Tailem Bend in South Australia and Balranald in New South Wales via Ouyen;
- the Murray Valley Highway which connects Robinvale, Swan Hill and Echuca to Wodonga and Towong;
- the Sunraysia Highway which connects Ouyen to Ballarat via Donald;
- the Henty Highway which connects Lascelles to Portland via Horsham

The rail network includes direct freight rail routes from Mildura, Kulwin and Robinvale lines via Dunolly and Ballarat to Melbourne, Geelong and Portland. The region does not have a major airport however it does have a number of smaller regional airports, including the state's third busiest passenger airport in Mildura.

Figure 2.2.1: Transport Connections, Mallee



Source: (Infrastructure Victoria, 2019)

2.2 Digital Infrastructure¹²

There are significant discrepancies in the levels of digital inclusion between regional areas and metropolitan areas. The Australian Digital Inclusion Index (ADII) is a composite index used to measure digital inclusion across three dimensions of Access, Affordability and Digital Ability. In 2021, All LGAs in the region scored well below the state average (71.0) on the index, with Buloke and Gannawarra scoring lowest, while Mildura and Swan Hill scored highest.

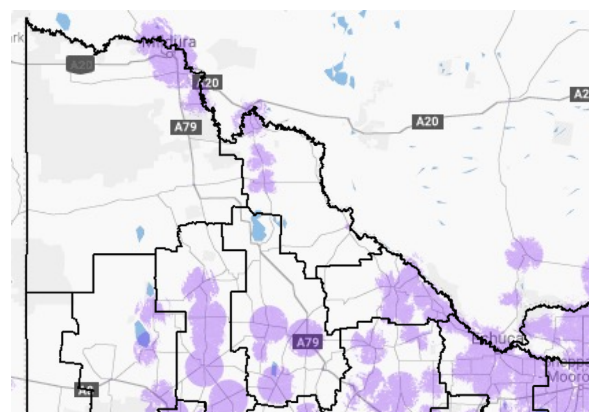
Table 2.2.1: ADII score comparison 2021, VIC

Local Government Area	Score
Buloke	60.0
Gannawarra	60.0
Mildura	64.0
Swan Hill	64.0
Vic Average	71.0

(Thomas, 2021)

Within population centres, mobile coverage appears to be adequate based on public coverage maps, however regional stakeholders often report the lived experience differs from what public coverage maps suggest. Mobile coverage quality also tends to be less reliable outside of regional population centres. The NBN Co rollout map (as at September 2020) indicates areas served by NBN Co fixed-line and fixed wireless services (purple) and those served by lower quality NBN Co Satellite services (white areas). The higher-quality fixed-line services (like FTTN and FTTP) are largely limited to town centres, with lower quality fixed wireless services serving the more sparsely populated surrounding areas (See Figure 2.2.2). In addition, coverage should not be taken to indicate connection quality.

Figure 2.2.2: NBN Rollout Map, Mallee



(NBNco, 2020)

2021 Connecting Victoria roundtable discussions identified a number of key digital issues for the region:

- Increased need for better home connectivity to support remote work, learning and tele health
- There are safety concerns for remote, lone workers and commuters in areas of patchy coverage
- Need for competitive internet speeds are needed for the competitiveness of local business and investment including renewable energy and tourism
- Dual needs in agriculture in addressing lack of connectivity for farmers working in remote areas and support for Internet of Things and other digital advancement in agriculture

¹² Fixed Broadband access terminology includes National Broadband Network (NBN) fixed-line broadband services including Fibre to the Premises (FTTP), Fibre to the Node (FTTN), Fibre to the Curb (FTTC), Fixed Wireless and Satellite service. Digital mobile networks capable of supporting voice telephony and data applications such as through 4G networks, with emerging Internet of Things capability.

The digital plan found that almost all tourist attractions assessed had issues with fixed access broadband services. While most tourist spots appear to have adequate mobile coverage, national parks and lakes are underserved (RDV, 2019).

The Victorian Government's \$550 million Connecting Victoria program is designed to give more Victorians across the state access to business-grade broadband and high-quality mobile services. This includes improving 4G mobile coverage, helping more places become 5G ready, and improving public safety during emergencies through more resilient and accessible services.

The program will enable more businesses to take advantage of digital opportunities with more reliable, better value broadband in more places, including popular shopping streets and business parks.

The quality of digital infrastructure across the region is highly variable. General information about the pattern of digital infrastructure availability across regional locations is summarised in table 2.2.3 below.

Table 2.2.3: General findings for the supply of digital infrastructure in regional Victoria

	Fixed broadband access	Mobile access
Cities and large towns, such as Mildura and Swan Hill	Generally comparable to metropolitan Melbourne with some access to FTTP and widespread provision of FTTN within town centres, but fixed wireless and satellite serving the town fringe and beyond	Generally comparable to metropolitan Melbourne with multiple carriers operating 4G networks, but quality and reliability of access can fade beyond town centre
Small towns and localities, such as Charlton and Lake Boga	Generally provisioned with fixed wireless services in the town centre with the fringe and surrounding areas receiving satellite. Some small towns receive higher-speed FTTN or FTTC services	Less capacity and reliability than in larger towns. Better quality within the town centre than when moving into surrounding areas and between towns
Primary production areas, such as grains cropping north of Birchip	Lower capacity fixed broadband technologies like fixed wireless and satellite available due to remoteness of these farms / businesses. Fixed wireless more available closer to population centres	Variable service quality across primary production areas. Better when closer to population centres and unimpeded by local topography
Tourist locations, such as Lake Tyrrell	Most relevant to tourist operators and businesses. Higher capacity technologies like FTTP available to operators in town centres, but lower capacity services like fixed wireless and satellite in more remote tourist locations	Often weak coverage in remote locations such as trail walks and national parks and network limitations in accommodating large influxes of visitors such as periodic events
Transport corridors, such as major highways and rail lines	N/A	Stronger and more reliable coverage on large highways and rail lines, with service quality and reliability compromised on smaller roads and in more remote areas

(Infrastructure Victoria, 2019)

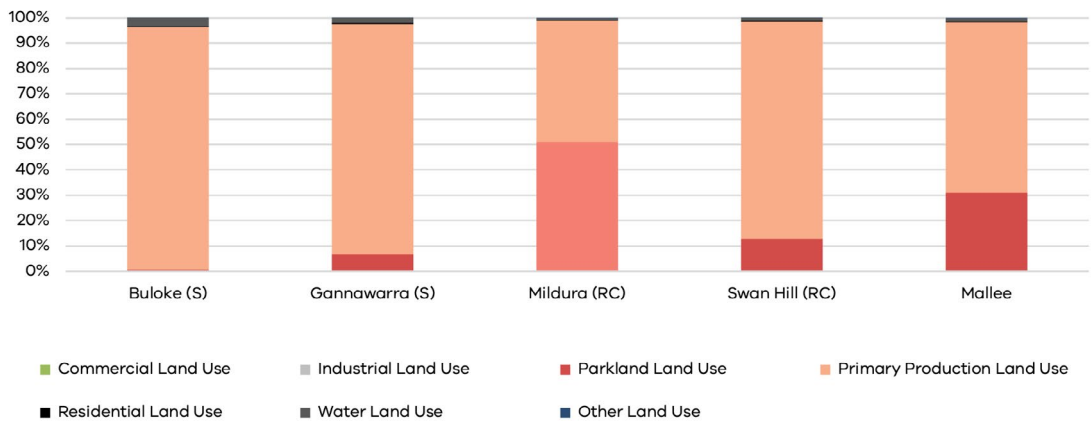


2.3 Natural Endowments

Figures 2.3.1 and 2.3.2 indicate the land use in the Mallee and its constituent LGAs. Land use is predominantly split between primary production and parkland use.

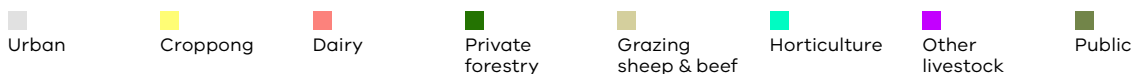
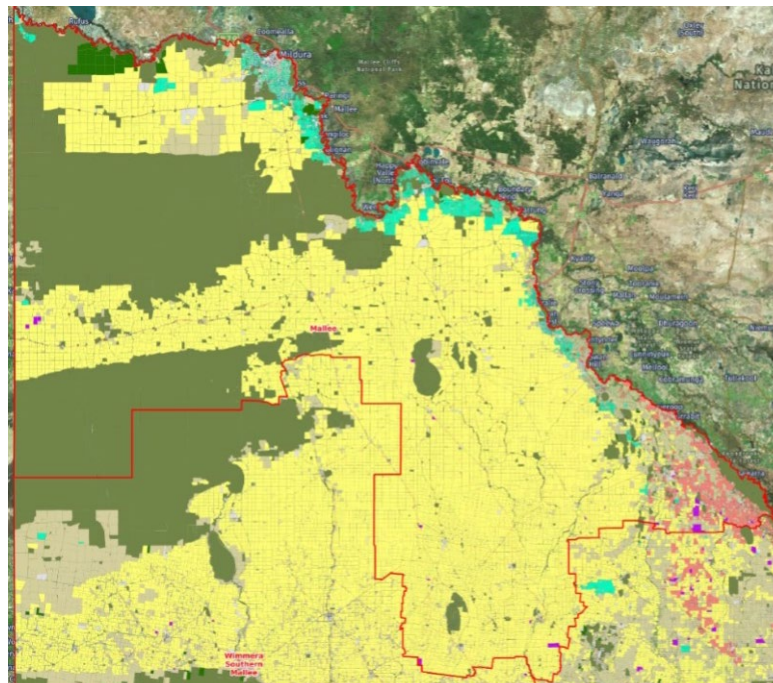
Within the region, 67 per cent of land is used for primary production. This comprises irrigated horticulture in the north along the Murray River; dryland farming and broadacre cropping in the east particularly; while dairy is concentration in the far east and grazing for livestock appears in pockets.

Figure 2.3.1: Land Use by LGA, Mallee



Source: (ABS, 2017)

Figure 2.3.2: Spatial Map of Land Use



(Agriculture Victoria, 2020)

Environmental Assets

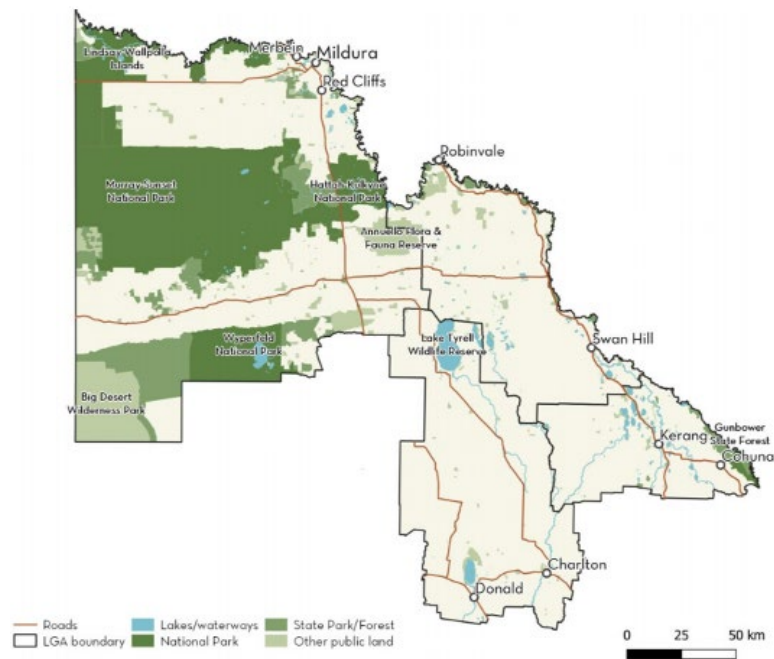
In the Mallee, 31 per cent of land is public land and parkland. This area is largely concentrated in Mildura where over half of the municipality is parkland, including the Murray Sunset National Park and Wyperfeld National Park. Across the region, this public land provides environmental, social, cultural and economic value (see Table 2.2.3 and Figure 2.2.4). The environmental assets include floodplains, wetlands, rivers, grasslands and forests across both public and private land. (Infrastructure Victoria, 2019). Many of these sites are associated with Aboriginal Cultural heritage and provide amenity to communities and attracting regional tourism.

Table 2.2.3: Key Environmental Assets, Mallee

National Parks	State Forest and State Parks	Other
<ul style="list-style-type: none"> • Murray-Sunset National Park • Hattah-Kulkyne National Park • Wyperfeld National Park • Gunbower National Park 	<ul style="list-style-type: none"> • Gunbower State Forest 	<ul style="list-style-type: none"> • River Red Gum forests along the Murray River (partially within the Gunbower National Park, Hattah-Kulkyne National Park and Chowilla Floodplain-Lindsay Wallpolla Islands) • Chowilla Floodplains and Lindsay-Wallpolla Islands • Hattah Lakes • Gunbower -Koondrook Perricoota Forest • Big Desert Wilderness Park • Annuello Flora and Fauna Reserve • Lake Tyrell Wildlife Reserve.



Figure 2.2.4: Key Environmental Assets, Mallee



Source: (Infrastructure Victoria, 2019)

Mineral resources and forestry

The Mallee does not host significant amounts of extractive activity. The small amount is largely based around sand and stone resources, including clay and clayshale, limestone, sand and gravel and granite. The region also has some extraction activity for gypsum and salt. (Infrastructure Victoria, 2019). The region is not host to commercial forestry activity and the landscape is unlikely to facilitate any such activity into the future.

Renewable energy

Renewable energy sources are a growing focus in the Mallee region, particularly due to strong solar resources. As at 2019 rooftop solar has seen strong growth with 18.3 per cent of roofs in Mildura and 27.6 per cent in Gannawarra now having solar. Solar farms have also seen strong take up, particularly in Mildura (258.2MW), Swan Hill (190.7MW) and Gannawarra (50.0MW) as at 2019. The region has many more solar projects in the pipeline, already with planning approval (DELWP, 2019).

As there are significant solar power opportunities in the region, The Mallee has potential to be a significant exporter of renewable energy. According to the renewable energy roadmap, the Loddon Mallee region (which includes the Loddon Campaspe Regional Partnership region alongside the Mallee) could generate 5 times its current energy needs once all the current planned solar farms are operational.

However, the renewable energy roadmap identifies the limitation of the transmission infrastructure in the region which is considered weak or very weak (DELWP, 2019). This issue of transmission presents as a barrier for the region to export renewable power, and therefore limits the economic dividends of solar power in the region.

The region is less conducive to wind power generation, and there are no wind farms currently in Mallee. Small scale bioenergy resources are currently in use across the region, utilising a wide range of feedstock, from agricultural by-products to municipal waste. These are currently small in scale and are limited by access to feedstock and limited investment in larger generators thus far (DELWP, 2019).

In addition, the Mallee's significant renewable generation capacity provides it with a competitive advantage in relation to a future hydrogen economy (Regional Development Victoria, 2020). The availability of biomass provides the region with opportunities to pursue green hydrogen generation. The region is home to hydrogen ready networks as well as established transport infrastructure and considerable freight activity which could support sector development. Transport and mobility possibilities, particularly long-haul transport and injection of hydrogen into the gas network present the most near-term hydrogen opportunities for the region. Electricity generation and grid stability, alongside energy storage are important but have a longer time horizon for realisation.

The uptake of renewable energy has been driven at the local level by a number of small community energy groups such as the More Australian Solar Homes (MASH); a residential bulk buy program for rooftop solar and batteries operating in Swan Hill. Community renewable energy projects are owned and run by local communities and are diverse and can include solar panels or hot water bulk buys, micro or mini grids, community-owned solar or wind farms or electricity retailers. (DELWP, 2019).

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04 Strategic context

Mallee Regional Economic Development Strategy

The following table describes the local strategies, plans and frameworks that shaped the Mallee REDS, including to define an economic narrative for the region and ensure the strategic directions in the REDS are aligned with local priorities.

Table 4.1.1: Strategic context

Loddon Mallee Renewable Energy Roadmap 2020	
Purpose	Outlines what a future sustainable renewable energy landscape could look like for the region and identifies some of the area’s key opportunities
Identified priorities	<ul style="list-style-type: none"> • Upgrade grid infrastructure to realise the region’s solar potential • Maximise community benefit sharing and maintain social license • Coordinate and optimise Distributed Energy Resources • Maximise the potential for bioenergy • Support community energy • Understand the opportunities for emerging technologies • Be proactive about future jobs and training needs
Influence on the REDS strategic directions	<p>Agriculture & manufacturing</p> <hr/> <p>Visitor economy</p> <hr/> <p>✓ Renewable energy</p> <hr/> <p>✓ Workforce</p> <hr/> <p>Cross Border Zones</p>
Roadmap to a hydrogen economy — Mallee Region 2020	
Purpose	To provide a clear path for the region to understand and realise opportunities in the emerging domestic and international hydrogen markets
Identified priorities	<ul style="list-style-type: none"> • Establish a Mallee hydrogen steering committee • Undertake a rigorous hydrogen ‘hub’ feasibility study • Support a demonstration scale project • Pursue near term collaboration opportunities with industry • Targeted investment attraction initiatives • Policy advocacy
Influence on the REDS strategic directions	<p>✓ Agriculture & manufacturing</p> <hr/> <p>Visitor economy</p> <hr/> <p>✓ Renewable energy</p> <hr/> <p>✓ Workforce</p> <hr/> <p>Cross Border Zones</p>

Mallee Economic Growth Strategy
2019

Purpose	Focuses on employment, growing Gross Regional Product and improving regional prosperity through productivity gains, increased wages and higher level of education attainment.
Identified priorities	<ul style="list-style-type: none"> • Murray Mallee economic region • Expand business and innovation • Develop future skills for the region • Capitalising on Mallee’s energy, mining and resource industries • Build rural towns and cities
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Mallee Regional Partnership Outcomes Roadmap
2019

Purpose	Outlines the long-term outcomes and the challenges associated with achieving them
Identified priorities	<ul style="list-style-type: none"> • Increased growth in the agriculture and food manufacturing sectors • A more diverse economy • A skilled workforce meeting current and future industry needs • Connected communities with equitable access to services • Resilient small Mallee townships and settlements • Health and wellbeing for all
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Mallee Digital Plan 2020	
Purpose	Identifies gaps and opportunities across the region’s digital landscape and makes recommendations to address gaps and to realise the region’s full digital potential
Identified priorities	<ul style="list-style-type: none"> • Addressing digital coverage gaps • Encourage digital update • Building digital capability and skills
Influence on the REDS strategic directions	✓ Agriculture & manufacturing
	✓ Visitor economy
	Renewable energy
	✓ Workforce
	Cross Border Zones
Central Murray Regional Transport Strategy 2019	
Purpose	Provides an evidence-based framework for ensuring a ‘fit for purpose’ transport network for the region, now and into the future.
Identified priorities	<ul style="list-style-type: none"> • Promote and facilitate transport systems that support regional economic development and population growth • Support efficient and sustainable transport of products between producers, markets and nodes, connecting to other destinations • Improve the capacity and function of the transport network • Manage the transport system so that it is a safe and affordable level of service • Improve the transport connectivity of large and small communities • Support improved community health and environmental outcomes
Influence on the REDS strategic directions	✓ Agriculture & manufacturing
	✓ Visitor economy
	Renewable energy
	Workforce
	✓ Cross Border Zones

Wimmera Mallee Destination Management Plan
2019

Purpose	Provides a strategic approach to prioritising key tourism experiences and product development and ensure continued sustainable growth of the visitor economy.
Identified priorities	<ul style="list-style-type: none"> • Capitalise on the region’s unique heritage assets and emerging arts and culture scene • Development, enhancement and activation of the regions iconic and diverse nature assets and waterways • Development of touring product and awareness • Leverage the strong Indigenous cultural heritage • Build on the region’s agricultural strength to develop unique food and agritourism products and experiences • Identify key infrastructure projects required to support and grow tourism development across the region • Improve visitor readiness and servicing across the region through industry capacity development and improved tourism governance
Influence on the REDS strategic directions	<p>Agriculture & manufacturing</p> <hr/> <p>✓ Visitor economy</p> <hr/> <p>Renewable energy</p> <hr/> <p>Workforce</p> <hr/> <p>Cross Border Zones</p>

Murray Region Destination Management Plan
2018

Purpose	Provides a strategic approach to prioritising key tourism experiences and product development and ensure continued sustainable growth of the visitor economy.
Identified priorities	<ul style="list-style-type: none"> • Continued focus on the River • Stronger focus on key nature-based assets • Sport and recreation as a driver of visitation • The rise of beverage tourism as well as quality food and agritourism. • Growth of arts and cultural related infrastructure • Changes in consumer behaviour with visitors • Continued investment and diversification in accommodation • Opportunities to capture a greater share of international visitation • Investment in infrastructure including transport and visitor servicing infrastructure
Influence on the REDS strategic directions	<p>Agriculture & manufacturing</p> <hr/> <p>✓ Visitor economy</p> <hr/> <p>Renewable energy</p> <hr/> <p>Workforce</p> <hr/> <p>✓ Cross Border Zones</p>

Mallee Regional Skills Demand Profile
2017

Purpose	The profile identifies changes in the region’s economy and shifts in industry, highlighting the skills and training needs of the region to support these shifts.
Identified priorities	<ul style="list-style-type: none"> • Highlight industry career opportunities and skill requirements to students and future workers • Improve student on-the-job exposure to regional careers in secondary school • Specify, provide and support a model for providing career advice to students in schools • Ensure students complete qualifications appropriate to their experience level • Strengthen vocational training and employment pathways in Year 11/12 • Raise the language, literacy and numeracy (LLN) standards of students and improve training in general skills sets • Ensure training challenges and extends students to develop and improve • Revise licensing models to incentivise and recognise higher levels of competence • Maintain and update the Regional Skills Demand Profile
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Mallee Regional Skills Demand Profile Pulse Check
2020

Purpose	A ‘pulse check’ against the original Mallee Regional Skills Demand Profile commissioned in 2017.
Identified priorities	<ul style="list-style-type: none"> • Structural barriers to labour participation and mobility • Ability to fill specialised roles • Increasing competition for labour in high volume roles • Dependence on seasonal labour • Awareness of and interest in local job opportunities • Availability and capacity of in demand courses • Leadership and management
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Loddon Mallee North Regional Growth Plan
2014

Purpose	Provides broad direction for regional land use and development in the region for the next 30 years, and detailed planning frameworks for key regional centres.
Identified priorities	<ul style="list-style-type: none"> • Balance our irrigation, amenity and environmental water needs • Strengthen our settlements and communities, especially our small towns • Strengthen and diversify our economy • Improve our infrastructure • Improve education and training outcomes • Protect and enhance our natural environment • Resolve our cross-border issues
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Buloke City Council Economic Development and tourism Strategy
2018

Purpose	The economic development and tourism strategy provides direction for council to achieve its economic aspirations.
Identified priorities	<ul style="list-style-type: none"> • Support the retention and expansion of existing businesses in the Shire • Attract new business investment and infrastructure • Collaborate at a regional level to share in economic development and tourism initiatives • Leverage financial resources for economic development
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy Renewable energy Workforce Cross Border Zones

Swan Hill Region Economic Development Strategy
2017

Purpose	Provides strategic direction for economic growth in the Swan Hill municipality over a five-year period and beyond. It aims to build on the region's strengths, capture new opportunities and address challenges to make the region a highly desirable place to invest, live, work and visit.
Identified priorities	<p>Expand the regions strengths:</p> <ul style="list-style-type: none"> • Enhance liveability • Support existing business growth <p>Develop new opportunities:</p> <ul style="list-style-type: none"> • Renewable energy and waste • Value adding • Attract and encourage new business • Improve tourism product and experience <p>Take up the challenge:</p> <ul style="list-style-type: none"> • Transport and logistics • Industry development • Housing development
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Mildura City Council community and Council Plan
2017

Purpose	Guides Council's priorities, strategies and objectives in four broad strategic areas — Community, Environment, Economy and Council. It will be used to guide the management and delivery of Council services and infrastructure for residents and inform Council's annual planning and budget processes.
Identified priorities	<ul style="list-style-type: none"> • A vibrant, diverse, innovative and sustainable economy • Investment attraction and job creation • Connectivity to the global marketplace • Accessible information, internet and telecommunications services • Support quality tourism services and experiences
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Gannawarra Shire Council Plan
2017

Purpose	The Council Plan serves as a 'road map' to focus Council's activities over the next four years as they continue to work towards a liveable, productive, and sustainable municipality where opportunities are provided for all.
Identified priorities	<ul style="list-style-type: none"> • Connectivity (people, digital and transport) • Economic diversity, growth and prosperity (Business growth and tourism) • Sustainable natural and built environments • Good governance and a healthy organisation • Strong healthy communities
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

Gannawarra Shire Council Economic Development Strategy
2019

Purpose	The purpose is to respond to the existing economic situation of the Gannawarra Shire and to align with Council's vision by presenting a clear and achievable strategy/action plan
Identified priorities	<ul style="list-style-type: none"> • Facilitate the development of a diverse agricultural sector • Drive population growth through business and lifestyle attraction • Facilitate the development of the Gannawarra as an environmental leader • Develop the tourism sector through improvements in product and infrastructure
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy ✓ Renewable energy ✓ Workforce ✓ Cross Border Zones

First People of the Millewa-Mallee Aboriginal Corporation Action Plan
2020

Purpose	The Plan outlines aspirations for the future of the First People of the Millewa-Mallee.
Identified priorities	<ul style="list-style-type: none"> • Country: Environment & Ecosystem Restoration • Culture: Cultural Heritage and Business Development • People: Social Justice and Employment
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing Visitor economy ✓ Renewable energy ✓ Workforce Cross Border Zones

Dhelkunya Dja — Dja Dja Wurrung Country Plan
2014

Purpose	<p>The Plan outlines aspirations for the future of the Dja Dja Wurrung people.</p> <p>Grounded in acknowledgement of Dja Dja Wurrung culture, Country and rights, it is an aspirational document which identifies goals, objectives and actions across nine themes</p>
Identified priorities	<ul style="list-style-type: none"> • Djaara (people) • Cultural Practices and Customs • Cultural Heritage • Bush Tucker (edible and medicinal plants and animals) • Rivers and Waterways • Land • Self-determination • Traditional Owner Economy • Joint Management
Influence on the REDS strategic directions	<ul style="list-style-type: none"> ✓ Agriculture & manufacturing ✓ Visitor economy Renewable energy Workforce Cross Border Zones

Growing What Is Good Country Plan: Voices of the Wotjobaluk Peoples
2016

Purpose	The Plan defines the self-determined vision for the future of the Wotjobaluk People.
Identified priorities	<ul style="list-style-type: none"> • More Time on Wotjobaluk Country • Strengthening Wotjobalu Culture and Language • Education and Rewarding Jobs for Wotjobaluk People • Strong Partnerships • A Strong Voice for Wotjobaluk Peoples • Caring for the Wotjobaluk Country
Influence on the REDS strategic directions	<p>Agriculture & manufacturing</p> <hr/> <p>Visitor economy</p> <hr/> <p>Renewable energy</p> <hr/> <p>✓ Workforce</p> <hr/> <p>Cross Border Zones</p>

Yorta Yorta Nation Strategic Plan
2019

Purpose	Part of the annual report and outlines the future aspirations of the Yorta Yorta Nation
Identified priorities	<ul style="list-style-type: none"> • To assert cultural authority over our country and gain greater autonomy and independence • To empower our family groups to be strong in our identity and to determine their own futures • To safeguard and promote our cultural knowledge and intellectual property • To continue to build a sustainable organisation that reflects the aspirations of our people
Influence on the REDS strategic directions	<p>Agriculture & manufacturing</p> <hr/> <p>Visitor economy</p> <hr/> <p>Renewable energy</p> <hr/> <p>Workforce</p> <hr/> <p>Cross Border Zones</p>

Contact us

Department of Jobs,
Precincts and Regions

Level 31, 121 Exhibition Street,
Melbourne, VIC 3000

T: +61 (03) 9651 9999

djpr.vic.gov.au