

Mallee Economic Growth Strategy

Technical Report

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Executive Summary

The Mallee Regional Partnership (MRP) have initiated the development of a Regional Economic Statement. To be prepared in two parts, the project will develop the next significant strategic economic development framework at a regional scale.

Development of a Regional Economic Statement (RES) is critical for the next phase of investment throughout the broader Loddon Mallee. The RES ultimately must provide a strategic basis and rationale for priority investment and projects throughout the region.

Stage 1 (the subject of this report) involves preparation of consolidated economic analysis that recognises the current situation based on the most recently available evidence (data & information) and targeted engagement to ensure regional insights and identify emerging priority areas for regional economic development.

The Mallee Region is an economic powerhouse that leverages its horticultural investment and large scale food industry production to support local regional prosperity. Agriculture, Forestry & Fishing, Manufacturing and Construction are the top three sectors by industry output representing \$4.458B (43.6%) of total output in the Mallee Region.

Between the last Census period, an additional 17,458 new jobs were created in the Mallee Region. The key sectors to expand the local economic base were Health Care & Social Assistance, Construction, Accommodation & Food Services, Education & Training, Agriculture, Forestry & Fishing and Administrative services.

Fundamentally, the regional issues that drive the need for regional economic response are underpinned by the following trends:

- A region where horticultural, agricultural and food related manufacturing drive demand for infrastructure investment
- Significant digital connectivity constrains local economic development opportunity
- Despite energy generation opportunity technical feasibility and policy conditions have limited large scale renewable energy development
- Attracting the right local skills across a range of sectors is a challenge
- Social and community infrastructure that underpin liveability standards requires investment
- Strong momentum in food industry and agribusiness presents opportunity to leverage regional transport infrastructure and rejuvenate old irrigation districts

ES-1 provides a summary of the key directions for emerging priorities in the Mallee region. It is likely that investment opportunities will require a partnership that unlock private investment and involves government support. Support from government may be realised through direct expenditure, policy review or new actions. These specific tasks will be identified during preparation of Part B and detailing of the final Mallee Regional Economic Statement.

ES 1 Summary of Mallee Regional Economic Statement: Emerging Priority Opportunities

Mallee/Murray as a national economic region

- Opportunity exists to promote the entire Mallee Murray region (VIC/NSW) as a key economic region; enabling co-ordinated marketing, infrastructure provision, accelerate access to export markets and encourage value add.

Regional Economic Policy

- Package the Mallee Murray Region as a unique national economic region to support and attract initiatives for across Victorian and New South Wales State Government and Federal Government to support infrastructure investment. The need to link strategic planning and policy with investment in business and economic enabling infrastructure should support future private investment throughout both the Victorian and NSW components of the Mallee Murray Region.
- Building on the current momentum in cross border relations, the development of a broader Regional Economic policy should incorporate both State and Federal Government support to develop greater consistency in regulatory environment to benefit job creation and private investment activity.
- The development of a consistent investment and brand strategy for the region will be an important outcome for the establishment of a national economic region through policy.
- The region performs an important national role. While not associated with population growth like metropolitan or regional centres, the nationally significant contribution in the Mallee Murray Region across food related industries demands an equitable infrastructure investment response by government. Future investment criteria should recognise the regions increased levels production and greater Value-add contribution per worker. In essence the region contributes significantly to Gross Regional Product, and infrastructure delivery should recognise this contribution by business and industry in the region.

Significantly enhance digital connectivity in the Mallee Region

The link between secure, reliable, cost effective and efficient digital connectivity infrastructure is fundamental to improved regional business opportunities.

Agri Tech and IoT

- Global momentum in Agri-tech that links research, data and increased levels of automation requires a co-ordinated strategy. The region is well positioned to pilot investment in networks, IoT and data sharing to grow the food industry. Internet of Things (IoT) on farm demonstration trials have been announced to commence on 1st July, 2018. Local learnings based on the Birchip Cropping Group will be essential.
- While advocacy for improved infrastructure is essential, the region must ready themselves for new opportunities, developing skills in digital literacy, addressing industry data/information standards to match technology requirements (data standards).
- Industry needs to equip themselves to leverage insights from high speed and up to date data that informs investment for their markets and enables improved management and digital communication of brand and regional quality.

Infrastructure investment - Technical feasibility

- Opportunities for leveraging railway corridors for access to fibre optics throughout the region require further investigation.
- Advances in technology including the "internet of things" via improved broadband or Low Power Wide Area Networks (LPWAN) are shaping the future of regional industries. Further trials and opportunities for development of LPWAN in existing high need agri-business districts should be explored for funding and support. Research to demonstrate the marginal economic benefit of infrastructure investment should underpin the proposal.

Addressing demand for skills & education

- The region requires the right skills to support regional business growth. There is a disconnect evident between the demand for skills in the region and the skills available to support industry growth.

Whole of Region Skills Assessment

- Build on the Skills Commissioner assessment of the Mallee to include Buloke/ Gannawarra at its next review.

Targeted vocational training

- Develop targeted programs to support the largest employing industries of Agriculture, Food product manufacturing, Construction and Health & Social Assistance including a particular focus on implementation of pathway development for Years 7-10 students.
- Strengthen link between local industries, schools/TAFE/universities and include young people in the solution. Anecdotal evidence suggests opportunity exists to develop projects in collaboration with SuniTAFE, local cadetships and school based apprenticeships.
- Leverage 2018 – 2019 budget commitment for a four-year \$109 million career education reform program - career and pathway training decisions for student, focus on career exploration workshops and improving engagement with industry.

Work integrated learning

- There is a need to better match business skill needs to training on offer – students are being trained for jobs that don't exist and not for the skills that are needed. Improving the link between workforce skills strategies and demand for local workforce and capability will be important.
- Opportunity exists to communicate future needs of the workforce and career advice connected to local industry. The success in other regions of building collaborative industry networks that work together to support skills development should be explored across the Murray Mallee Region.

'Liveability' infrastructure to support local jobs

- With a forecast proportional decline in the region's population, investment in infrastructure such as housing, schools and hospitals underpin the liveability of the region and secures local workforce into the future.

Great small towns

- The dispersed and often modest scale of many townships throughout the Mallee presents an significant challenge for renewal and investment. However, investment in towns promotes pride and aspiration and is good for both visitors and residents.
- Opportunity to explore the role of Co-Design, Place-making and citizen led township renewal should be explored. Capacity building and strategy should underpin redevelopment led by local community.

Social and Community Infrastructure Needs

- Understanding community and social infrastructure needs is fundamental to securing and enhancing liveability within a region. Further assessment is required to ensure key settlements are adequately supporting local employees and residents. Cross border governance models exists in the provision of health services and could be further explored to ensure adequate funding support in key settlements that service broader regional catchments than populations defined by State borders.
- Housing Studies are currently underway in Robinvale. Implementation of the findings of this study will assist in identification of strategies to overcome issues of housing supply and housing preferences to support current and future workforce demand.

Explore co-investment opportunities

- The local investment in horticultural activity, increasingly an automated and mechanised activity enables the generation of significant economic activity that is not adequately realised in local communities. This is incongruous. Development of industry networks that support issues around workforce development and training requirements may also provide a means for exploring the role of co-investment by government and industry in the long term presentation and infrastructure requirements of local towns in the region.

Leverage art and cultural industries

- Strengthen 'regional' links to arts, innovation, training – building on strong cultural connections, local arts and cultural activity to enhance liveability and attract future residents.
- The strong connection with local indigenous groups should be explored to recognise culturally significant traditions and landscapes but also promote enterprise. For example, there could be greater Indigenous involvement in flood plan management to involve skills, connect people to their environment, employment programs, tree planting.

- There is a need support development of skills by immigrants to feel supported and stay locally. Successful examples of this in locations such as Nhill (Love a Duck) have included support for English language, and access to health and education programs to support new comers within the region.

Growing the horticulture industry & processing capabilities locally

- The Mallee region is intrinsic in the Murray Darling mega region that produces 65% of Australia's Irrigated land; 1/3 of food supply & 40% of national agricultural revenue. The strength of both the primary and secondary food sector is directly reflected through its regional economic performance.

Rural Innovation

- Momentum in the establishment of Innovation Hubs and Agri-tech investment is underway and has the potential to accelerate local economic development opportunities. Building on the Mallee Regional Innovation Centre to unlock further innovation opportunities in horticulture that support education, research, workplace skills and ultimately private investment will be important. The scale of the region may necessitate satellite development of this model throughout other locations.

Renewing Irrigation Districts

- The Sunraysia Rejuvenation Project presents opportunities to rejuvenate previously pumped irrigated districts and further expand activity in the north west of the Mallee Region. Further investment and targeted rejuvenation of sites that meet established criteria should be supported.

Integrating freight and export opportunities

- Export and Value-add demand assessment is required to better understand the current role of Port of Melbourne within the region and future opportunities for direct export and value-adding (eg. Food product manufacturing) prior to commodities leaving the region. The assessment should also explore opportunities for value-adding on farming areas to diversify income (eg. Containerising activities at Moulamein Grain Co-Op)
- Murray Basin Freight Rail Project provides dedicated opportunity for increased tonnage direct from the Murray Basin to port. Identification of opportunities to actively leverage the investment through land use change, further transport infrastructure development (eg. Intermodal site) in association with this regional infrastructure investment should be prioritised.
- Subject to export and value add demand assessment complete feasibility study for creation of the Mildura inland port infrastructure and services to facilitate export (quarantine, AQIS, fumigation).

New market opportunities

- The region should embrace the notion of innovation through horticulture. Linkage between recent policy changes for development of medicinal cannabis for example presents opportunities for vertical integration from production, to research to pharmaceutical product manufacturing within the Mallee region.

Develop adaptation strategies

- The long term reliability on water for regional prosperity will present a risk to land managers who are unable to respond to market fluctuations in water pricing or future drought conditions. Industry must be ready to respond to probable periods with lower levels of accessible water for irrigation and production through development of climate change adaptation strategies.

Economic outcomes for energy & waste

- Access to secure cost-effective energy aligned with Victoria's commitment to adopted renewable energy targets is central to prosperous regions, industries, cities and households. Electricity prices (30%) & energy policy (29%) were the top two greatest economic challenges for Australian business at the end of 2017.

Advocacy & engagement

- Develop an advocacy and engagement strategy to address regulatory barriers and identified grid constraints within the system. Support Local Government in development of local capability to drive advocacy and facilitate local development outcomes.

- International investment has proven to expedite innovative solutions in other State jurisdictions. Develop advocacy and engagement strategy to address regulatory barriers. Energy and waste projects have been identified in the region and some are awaiting site approval or finance. Advocacy and engagement to unlock these opportunities.

Explore innovative financing

- Sustainability Victoria has created an innovative financing solution for energy efficiency through the Environmental Upgrade Finance mechanism. As a region, Mallee Region could explore and look to capitalise on innovative regional financing models through lens of regional development. This has been successfully applied for Bendigo Community Bank Model and could unlock feasible business solutions to waste and energy requirements at a regional scale.

Renewed regional tourism product

- Opportunity exists to increase visitor numbers to the region by investing in the region and promoting regional products. Tourism engagement has been recognised to create economic benefit through: access to talent, leveraging significant tourism outcomes; and expanding export of goods & services.

Co-ordinated Regional Tourism Strategy

- Develop a Mallee Regional tourism strategy with a focus on 'regional' tourism products.
- Target opportunities that build on economic capability with an emphasis on 2-way trade, direct foreign investment, attracting visitors and retaining talent/skills in the region and shift focus toward higher value tourism markets.
- Reconsider the regional tourism product from Sea Lake to Murray River and Mildura – that packages existing strong regional destination assets including: Murray Adventure Trail, Murray River, Lake Tyrell, Mildura, Koondrook/Barham.

1 What is a Regional Economic Statement

The Mallee Regional Partnership (MRP) have initiated the development of a Regional Economic Statement. To be prepared in two parts, the project will develop the next significant strategic economic development framework at a regional scale.

Considerable delivery and advancement of current recognised priorities in both the Loddon Mallee Regional Strategic Plan (RSP) and Investment Prospectus has occurred during the tenure of the current Regional Development Australia Committee and Regional Partnerships across both the Loddon Campaspe and Mallee Regions.

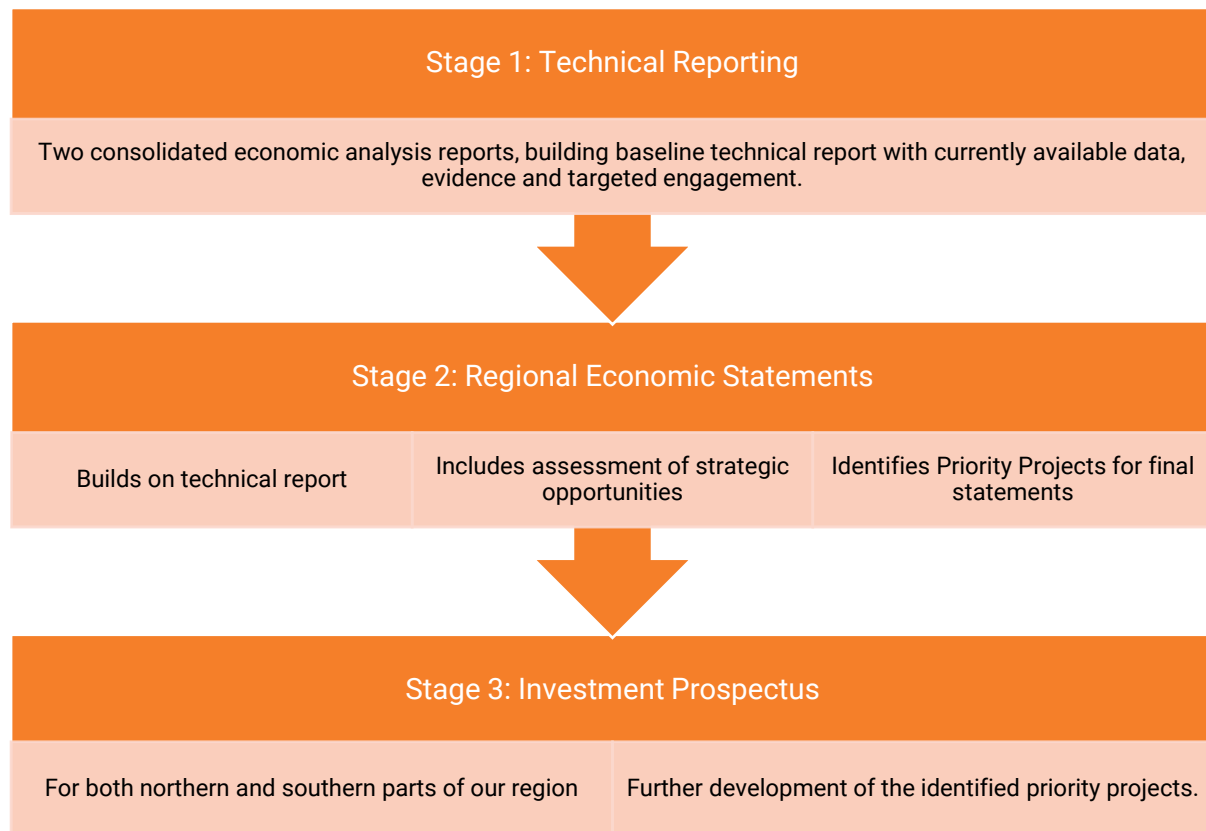
Development of a Regional Economic Statement (RES) is critical for the next phase of investment throughout the broader Loddon Mallee. The RES ultimately must provide a strategic basis and rationale for priority investment and projects throughout the region. Aligned to the core RDA charter of economic development, the RES needs to provide clarity for future RDA committees about how they can positively impact to economic advancement throughout the Loddon Mallee region and both the Loddon Campaspe and Mallee sub-regions.

As outlined in Figure 1-1, the RES is being delivered over three distinct project stages. Stage 1 (the subject of this report) involves preparation of consolidated economic analysis that recognises the current situation based on the most recently available evidence (data & information) and targeted engagement to ensure regional insights and identify emerging priority areas for regional economic development.

Stage 2 will build on this evidence base and prepare a consolidated Regional Economic Statement (RES) to utilise strategic opportunity assessment and priority project identification to prepare a final RES with specific initiatives outlined.

Stage 3 of the project will involve the preparation of a revised and updated Investment Prospectus for both the north and south of sub-regions within the Loddon Mallee region.

Figure 1-1 Regional Economic Statement Project Method



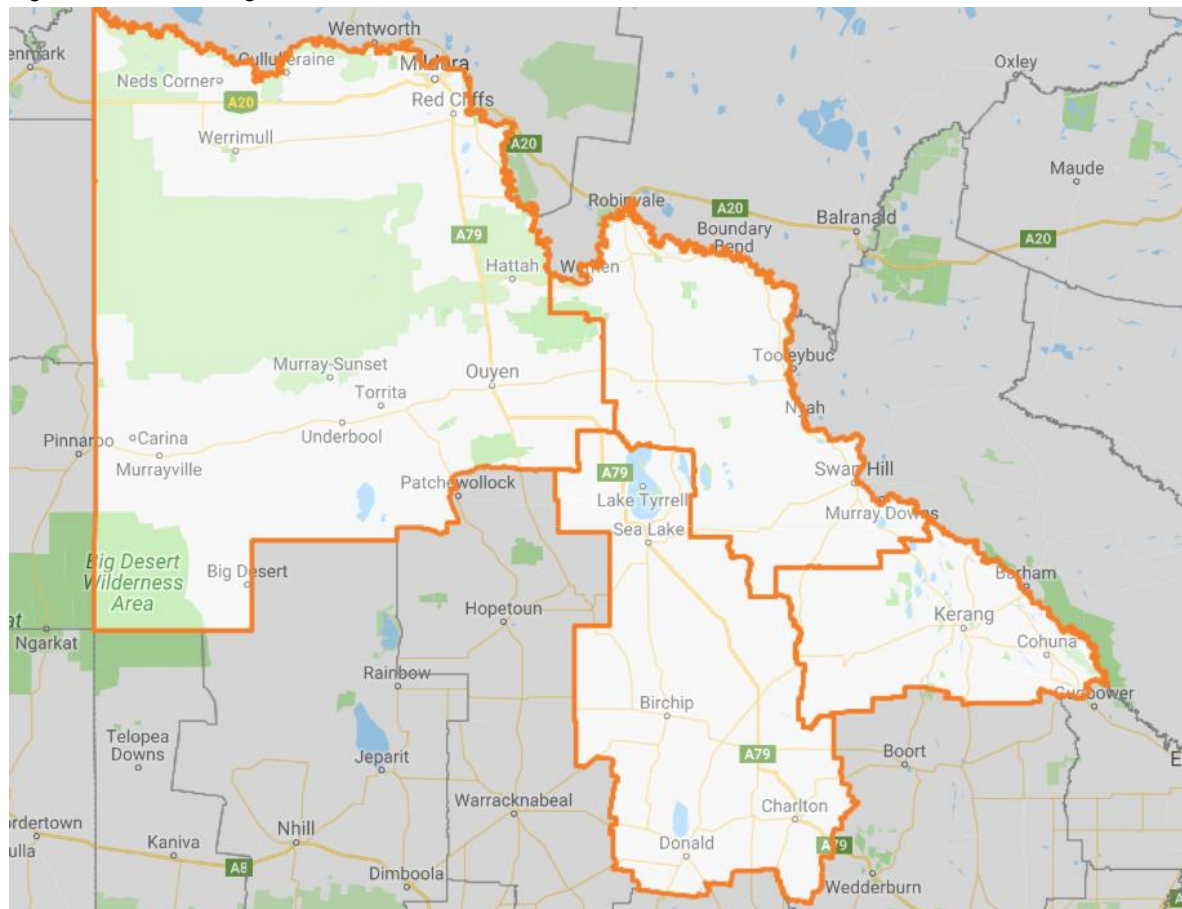
2 Regional Economic Context

The Loddon Mallee region is made up of two distinct geographical regions – Loddon Campaspe and Mallee. The region contains 10 local government areas (LGA), including City of Greater Bendigo, Mount Alexander Shire Council, Central Goldfields Shire Council, Macedon Ranges Shire Council, Loddon Shire and Shire of Campaspe in Loddon Campaspe; and Mildura Rural City Council, Swan Hill Rural City Council, Buloke Shire Council and Gannawarra Shire Council in Mallee.

In summary the key latest economic indicators indicate the following:

- The Loddon Mallee region has a population of 321,187 people.
- 59,898 (18.65%) persons are classified as youth (ages between 0-15) a slightly higher figure from the state (18.23%) and 62,586 (19.49%) are Seniors who are over the age of 65.
- The region has an unemployment rate of 5.2%, lower than the state average of 6.0%.
- Total output generated by the businesses within the Loddon Mallee region is estimated at \$36,399.293 million.
- 'Manufacturing' accounts for \$7,258.514 million (or 19.9% of total output) followed by 'Construction' (\$4,771.380 million) and 'Rental, Hiring and Real Estate Services' (\$3,443.054 million).
- The total employment (place of work) estimate for the Loddon Mallee region is 129,417 jobs.
- 'Health Care and Social Assistance' industry sector is the largest sector at 20,008 jobs (15.5%); followed by 'Retail Trade (13,348 jobs) and 'Manufacturing' (11,834 jobs).

Figure 2-1 Mallee Region



Source: <https://remplan.co/2N8q6xS>

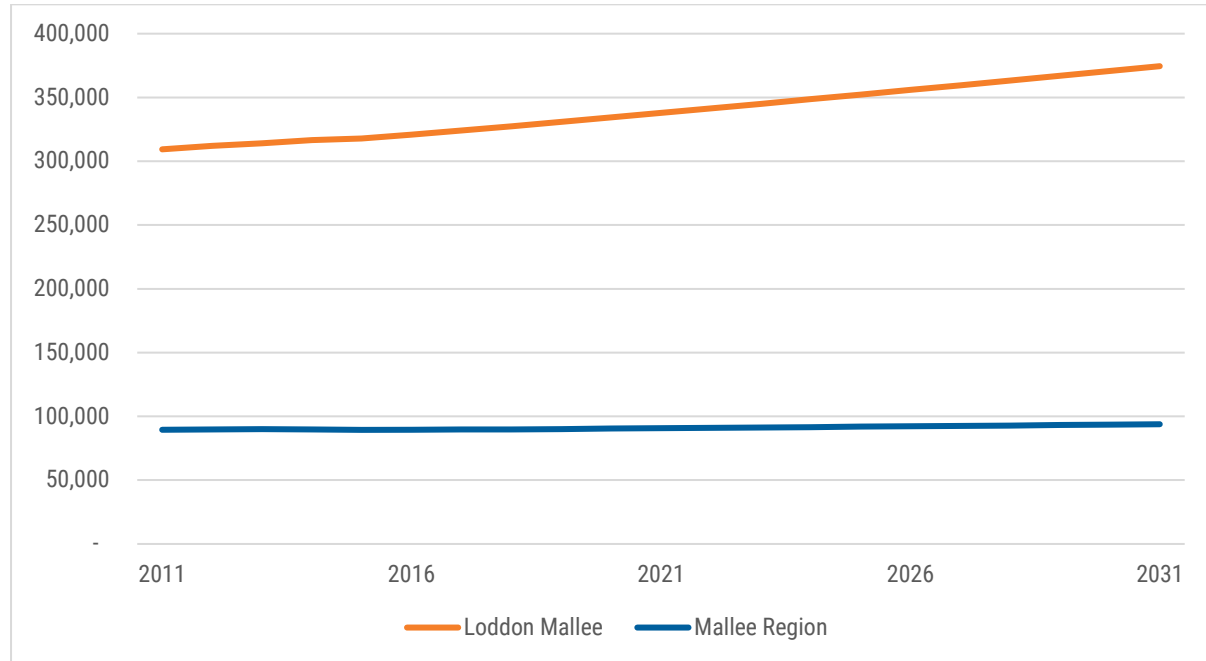
The following section of the report provides an overview of key economic data and associated trends. A more detailed current economic profile is detailed in the Appendices.

2.1 Mallee population

In 2017, the Mallee region contained a total population of 91,215 people. In 2017 the population of the Mallee region represented 28.14% of the total Loddon Mallee Region population and spans a distance bordering the Murray River through to the edge of the outback in north-western Victoria. The Mallee Region is projected to decrease its proportional share of population to 25% in 2031 (Figure 2-2).

The projected population within the Mallee region is modest. Over a 20 Year period Annual Average Growth Rates (AAGR) vary from 0.72% in the Rural City of Mildura to a rate of decline of -1.42% in Buloke. Across the region the populations AAGR is forecast to decline at a rate of -0.41%.

Figure 2-2 Regional Population Growth. Mallee (VIF 2016)

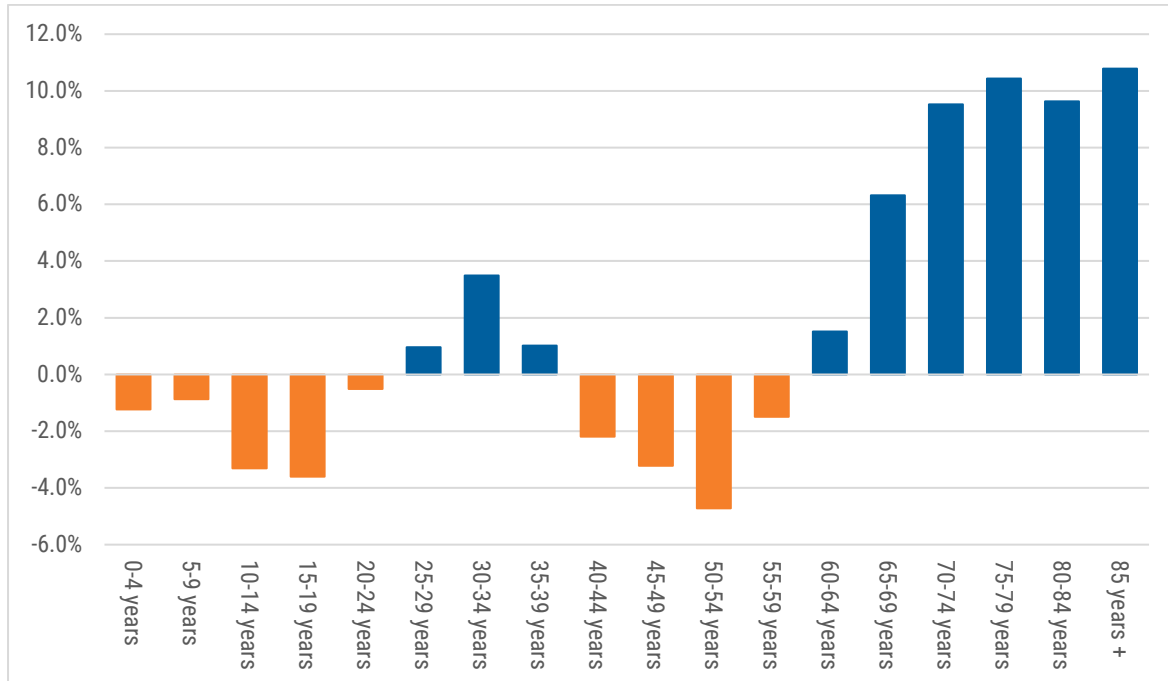


Source: VIF 2016, Compiled by REMPLAN.

The Mallee region has a population of 91,215 people, of which 16,867 (18.5%) are classified as youth (ages between 0-15) a slightly higher figure from the state (18.23%) and 18,609 (20.4%) are Seniors who are over the age of 65, also higher than the state (15.13%).

This current trend is further evident when analysing forecast population structure. Analysis of 20-year average population growth rates across 5 year age cohorts in the Mallee indicates significant growth of over 65 year old's. 24,226 persons are projected to be over 65-year-old by 2031 (Figure 2-3).

Figure 2-3 20 year average growth rate (5 Year age cohorts), Mallee

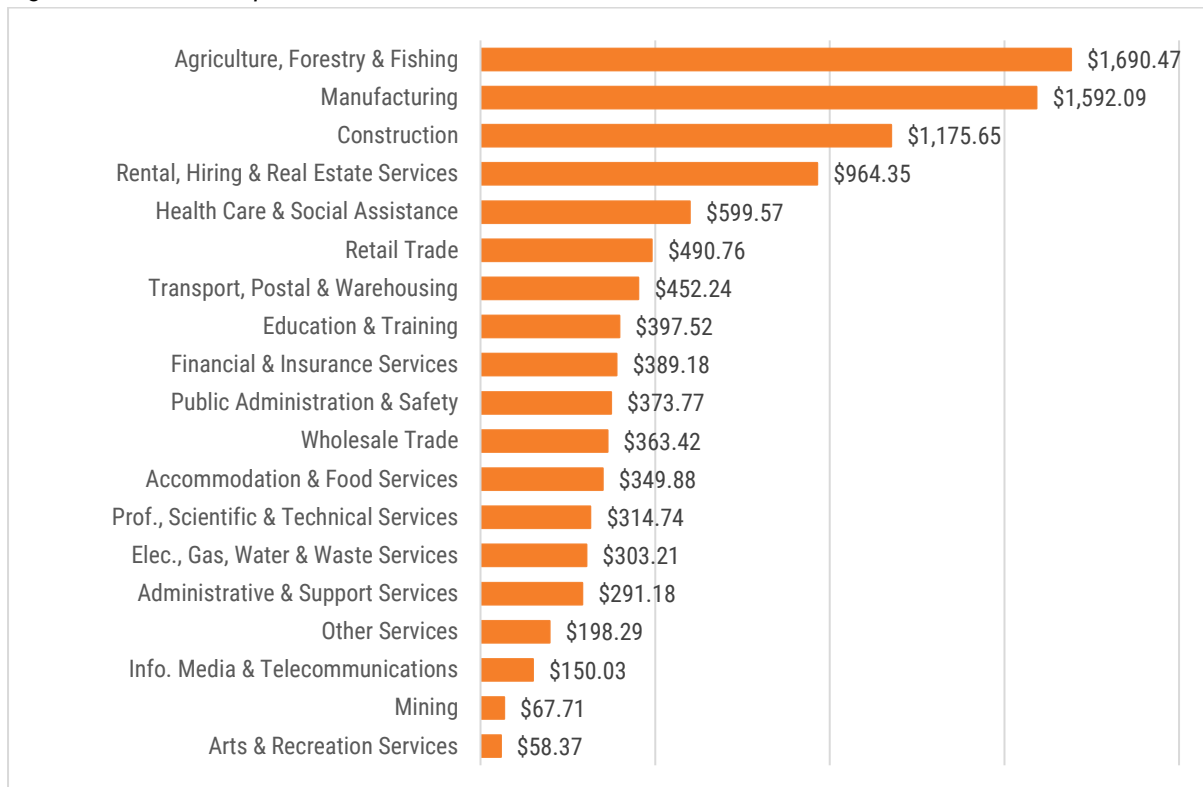


Source: Victoria in Future, 2016. Compiled by REMPLAN.

2.2 Industry performance

Output data represents the gross revenue generated by businesses / organisations in each of the industry sectors in a defined region. The output generated by the Mallee region is estimated at \$10,222.44 million. 'Agriculture, Forestry and Fishing' accounts for \$1,690.47 million (or 16.5% of total output) followed by 'Manufacturing' (\$1,592.09 million) and 'Construction' (\$1,175.65 million).

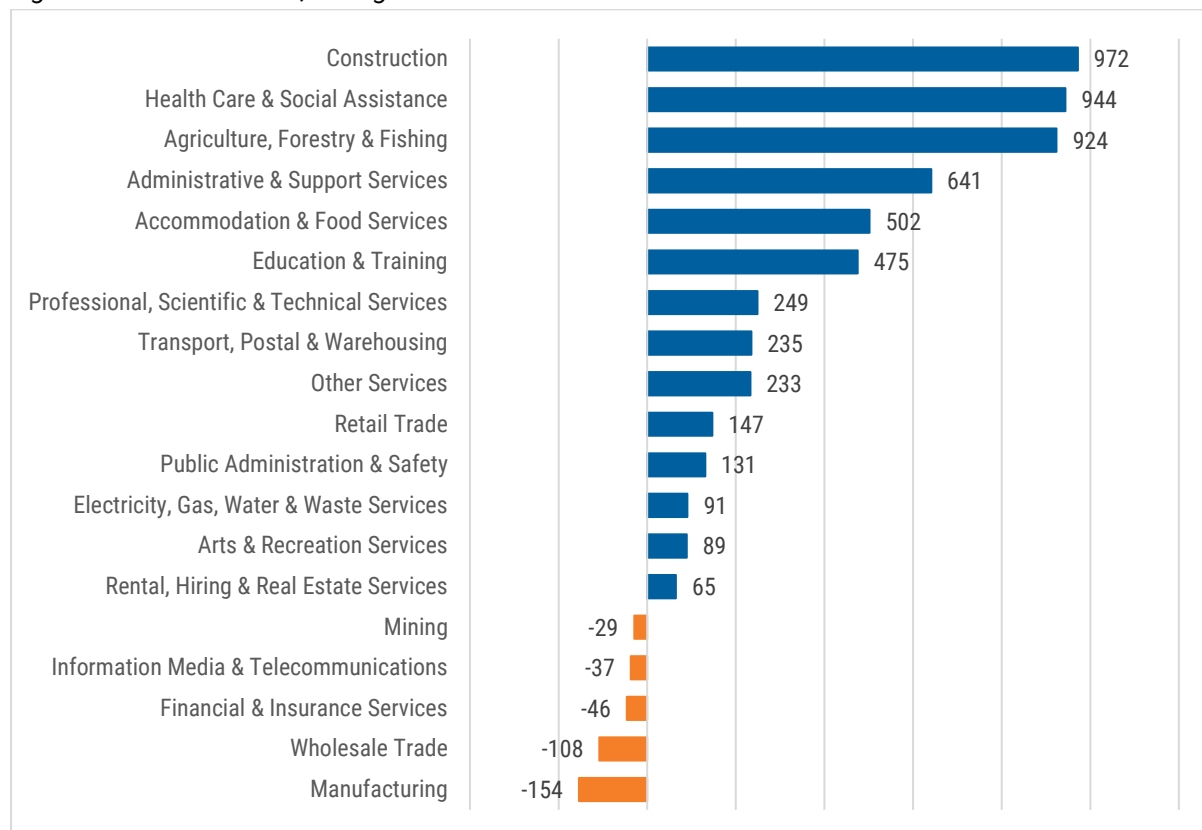
Figure 2-4 Mallee Output



The total employment (place of work) estimate for the Mallee region as at the 2016 Census is 38,038 jobs. The 'Agriculture, Forestry and Fishing' industry sector is the largest sector at 5,927 jobs (88.5%); followed by 'Health Care and Social Assistance' (5,262 jobs) and 'Retail Trade' (4,689 jobs).

Between the last Census period, an additional 3,432 new jobs were created in the Mallee region. The key sectors to expand the local economic base were Information Media and Telecommunications, Professional, Scientific and Technical Services, Accommodation & Food Services and Construction. These top four sectors represented 80.1% of new local jobs in the region between 2011 and 2016. Declines in the overall employment base occurred in Mining; Financial & Insurance Services; Electricity, Gas, Water and Waste Services; Public Administration & Safety; Transport, Postal and Warehousing; Wholesale Trade; Agriculture, Forestry & Fishing and Education & Training.

Figure 2-5 Jobs in Mallee, Change between 2011 and 2016¹.



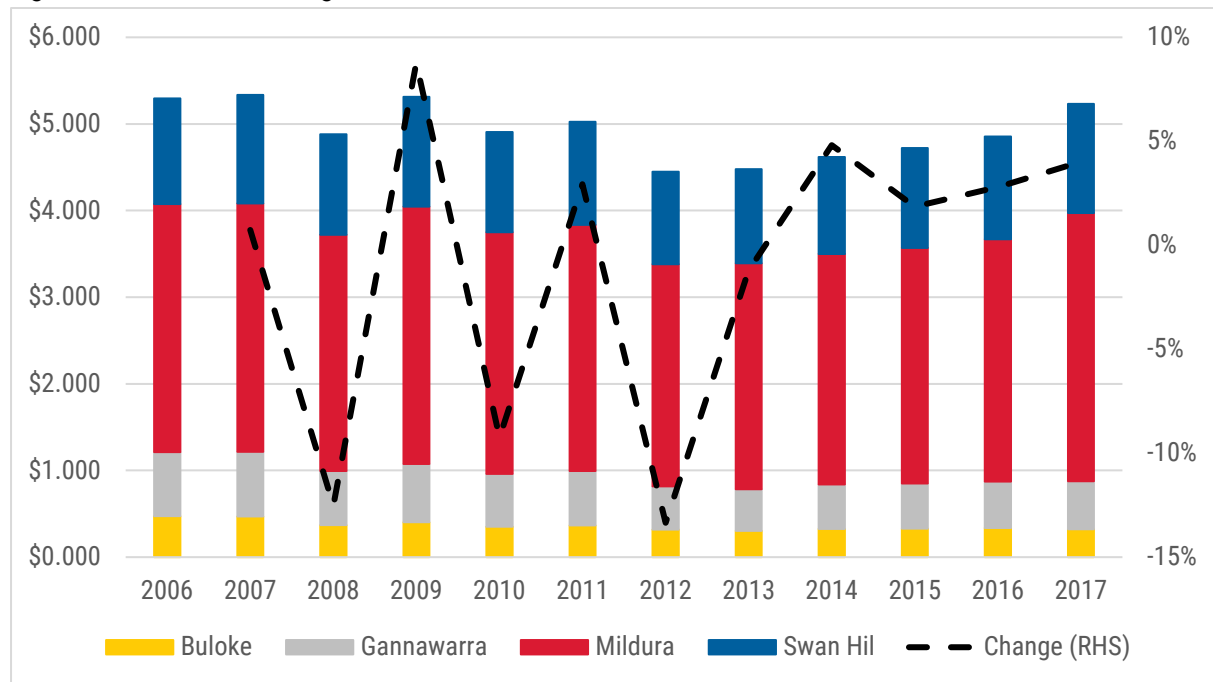
Value-added data represents the marginal economic value that is added by each industry sector in a defined region. The total value-added by the Mallee economy is estimated at \$4,922.692 million. 'Agriculture, Forestry and Fishing' contributes the highest value-added (\$797.139 million), followed by 'Rental, Hiring and Real Estate Services' (\$696.398 million) and 'Health Care and Social Assistance' (\$437.618 million).

However, the increased economic activity associated with the 'Food Industry' (aggregating Agriculture & Food Manufacturing) has been significant. This 'super sector' is a clear driver of marginal economic value in the region.

¹ In 2016 there was a change in methodology where by the employment data in each industry is now randomised independently of the total estimates of employment. The ABS rationale is that because the total values are always higher they are less affected by randomisation and so therefore the totals estimates are more accurate than previous Censuses. The 'Loss of Additivity' applies to all Place of Work (POW), Place of Usual Residence (POUR) and Place of Enumeration (POE) measures in the 2016 Census.

The 'Food Industry' contributes around \$939.905 million or 19.1% of Gross Regional Product (GRP) in the Mallee, more than double the contributions of Health Care & Social Assistance, and Construction. In turn this has supported a sustained period of economic growth in the region Figure 2-6.

Figure 2-6 Mallee Gross Regional Product



Source: Latest REMPLAN data incorporating Australian Bureau of Statistics' (ABS) June 2017 Gross State Product, 2014 / 2015 National Input Output Tables and 2016 Census Place of Work Employment Data.

3 Emerging Priorities

The following section of the Part A report provides direction for finalisation of the Regional Economic Statement. It seeks to provide a summary, context and identify opportunities for emerging economic priorities that can in turn leverage substantial investment and long term economic benefits for the Mallee region.

Table 3-1 provides a quick overview of the emerging priorities that are detailed below. The following format for each emerging priority has been applied to assist in defining the driver for economic investment in this area, including:

- **Policy Alignment** – identifying strategic alignment of the emerging priority with key current policy and regional programming
- **Summary** – provides an executive overview of the identified economic issue in the Mallee region
- **Context** – preliminary investment logic for the priority, describing the evidence base centred around change or identifiable data trends.
- **Opportunities** – provides insights for investment decisions that may include new initiatives, further enhancing existing opportunities or broader linkage with regional resources.

Table 3-1 Summary of Mallee Regional Economic Statement: Emerging Priority Opportunities

Mallee/Murray as a national economic region <ul style="list-style-type: none"> • Opportunity exists to promote the entire Mallee region as a key economic region; enabling co-ordinated marketing, infrastructure provision, accelerate access to export markets and encourage value add.
Significantly enhance digital connectivity in the Mallee Region <ul style="list-style-type: none"> • The link between secure, reliable, cost effective and efficient digital connectivity infrastructure is fundamental to improved regional business opportunities.
Addressing demand for skills & education <ul style="list-style-type: none"> • The region requires the right skills to support regional business growth. There is a disconnect evident between the demand for skills in the region and the skills available to support industry growth.
'Liveability' infrastructure to support local jobs <ul style="list-style-type: none"> • With a forecast proportional decline in the region's population, investment in infrastructure such as housing, schools and hospitals underpin the liveability of the region and secures local workforce into the future.
Growing the horticulture industry & processing capabilities locally <ul style="list-style-type: none"> • The Mallee region is intrinsic in the Murray Darling mega region that produces 65% of Australia's Irrigated land; 1/3 of food supply & 40% of national agricultural revenue. The strength of both the primary and secondary food sector is directly reflected through its regional economic performance.
Economic outcomes for energy & waste <ul style="list-style-type: none"> • Access to secure cost-effective energy aligned with Victoria's commitment to adopted renewable energy targets is central to prosperous regions, industries, cities and households. Electricity prices (30%) & energy policy (29%) were the top two greatest economic challenges for Australian business at the end of 2017.
Renewed regional tourism product <ul style="list-style-type: none"> • Opportunity exists to increase visitor numbers to the region by investing in the region and promoting regional products. Tourism engagement has been recognised to create economic benefit through: access to talent, leveraging significant tourism outcomes; and expanding export of goods & services.

Ultimately, the listed priorities require further refinement. The emerging initiatives are presented as ideas that if addressed would demonstrate significant benefit at a regional level. The issue of scale of investment required at a regional level must reflect the opportunity to positively impact on regional prosperity.

It is likely that investment opportunities will require a partnership that seeks to unlock private investment and involves government support. Support from government may be realised through direct expenditure, policy review or new actions.

These specific tasks will be identified during preparation of Part B and detailing of the final Mallee Regional Economic Statement.

3.1 Priority 1: Mallee/Murray as a national economic region

Policy alignment: Mallee Regional Growth Plan | Victorian Priority Sector Strategies | National Innovation Agenda | Regional Roads

3.1.1 Summary

- The Mallee Murray Region is significant in terms of its economic activity and in particular agricultural and food related production. The economic story of the region is not one of population growth, rather high levels of productivity across industry that drives significant Gross Regional Product.
- Recognising this significance is important in the context of broader competition for infrastructure investment that enables regional development. While population driven demand is present in regional centres and Australia's metropolitan centres, the Mallee Murray Region has a production driven infrastructure demands.
- Recognition of the region as an economic region will enable co-ordinated marketing, infrastructure provision, accelerate access to export markets and encourage value adding.
- Population growth and visitor economy activity is associated with urban settlements and notably Mildura. However, the significance of food industry growth must be central to a regional economic policy as it drives demand for increased levels of workforce and improved regional infrastructure
- There is a strong correlation between the region's economic prosperity and proximity of the Murray River. This economic activity naturally extends across State borders, with notable land and resource based economic activity occurring in New South Wales, and a higher proportion of urban settlement and household driven economic activity occurring in Victoria.
- The regional shift of irrigation water into Victoria's Mallee Murray region has promoted significant corporate scale investment and regional export activity. However, the longer term impacts of forecast climate change and water scarcity presents a risk to the region, in particular smaller farm holdings.
- There is a need to link regional economic policy and recognition of the region's economic prosperity with water resource planning as it underpins both food related industry (Agriculture & Manufacturing) as well as the regions visitor economy.

3.1.2 Context

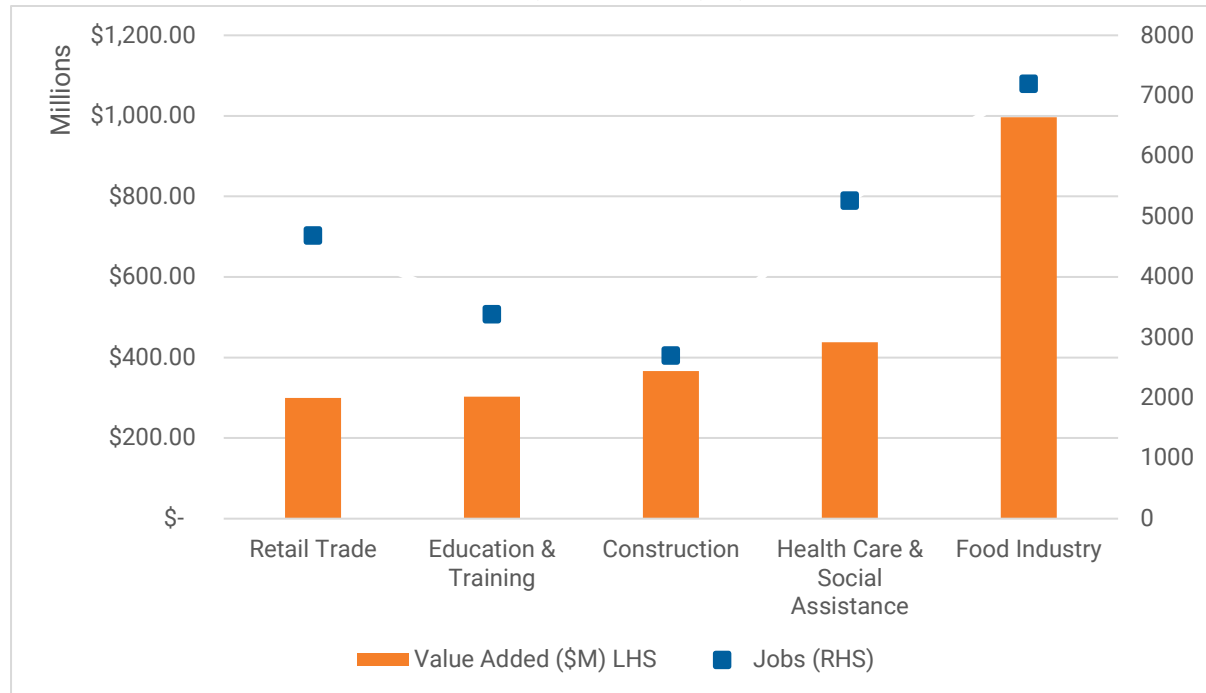
Broadacre cropping and irrigated agriculture drives the Mallee's economy, with the area surrounding Mildura, Robinvale and Swan Hill among Victoria's most productive horticultural region. The Food Industry sector (made up of 'Agriculture, Forestry and Fishing' and 'Food Product Manufacturing') contributes \$2,382.249 million (23.3%) of total output in the Mallee and supports over 6,950 jobs in the region.

Opportunity exists to promote the entire Mallee Murray region as a key economic region; enabling co-ordinated marketing, infrastructure provision, accelerate access to export markets and encourage value add.

The interconnectedness between local industries and supply chain links places the region well in regard to commodities, particularly export markets with almonds and pulses including lentils. The Murray Darling mega region represents 65% of Australia's irrigated land and produces 1/3 of the nation's food supply & 40% of agricultural revenue. Despite generally weak population growth in these regions, the ability to generate increased revenue with a lower workforce through technology investment is driving significant momentum in agricultural investment from Dubbo to Leighton, to Deniliquin and Mildura.

The 'Food Industry' sector contributes around \$996.483 million or 20.2% of Gross Regional Product (GRP) in the Mallee, more than double the contributions of Health Care & Social Assistance, and Construction.

Figure 3-8 Food Industry contribution to GRP (Value Added (\$M))

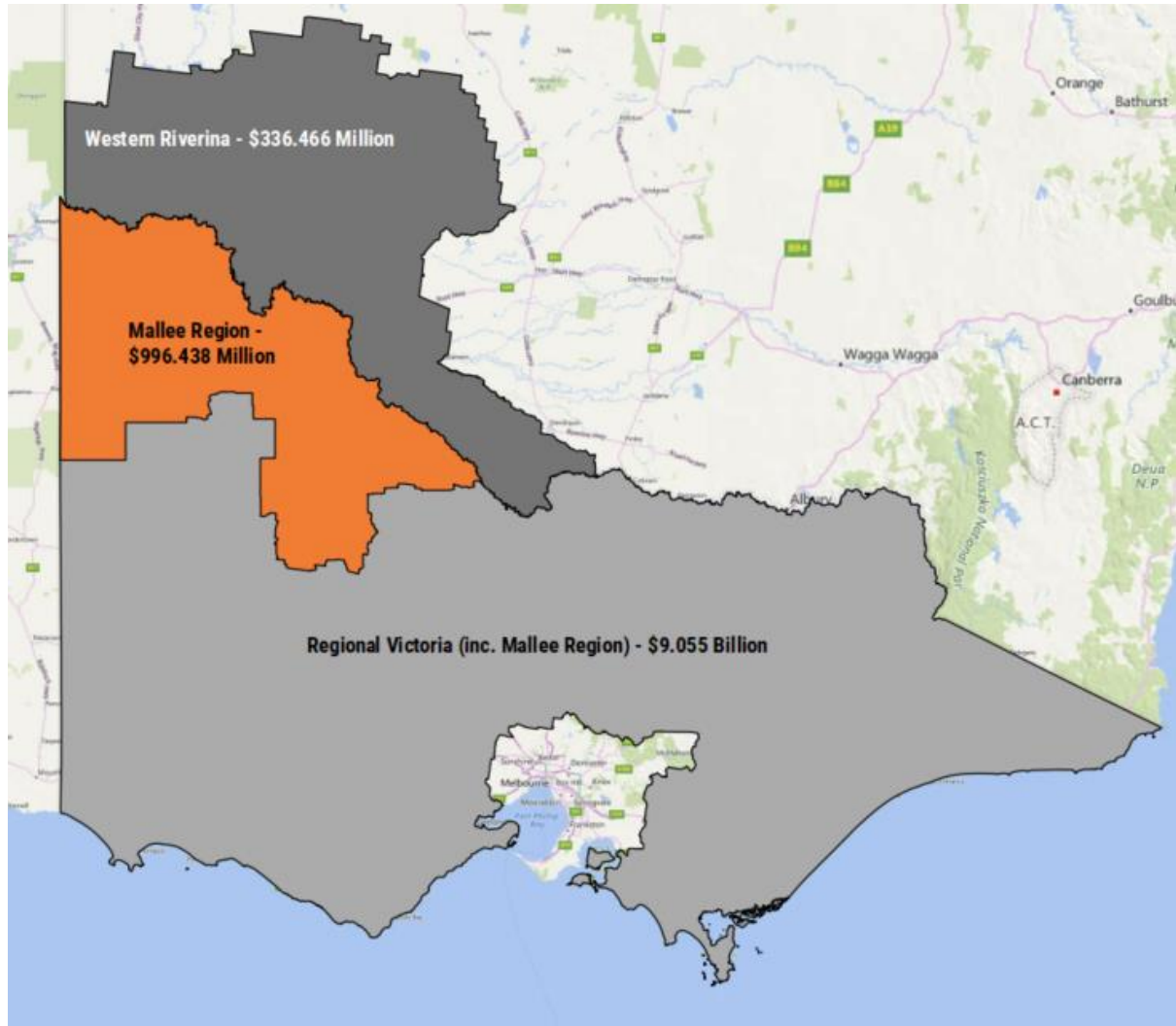


Source: REMPLAN, Mallee (2018) dataset.

Despite economic growth and momentum in the agricultural based industries of the region, there is recognised issues regarding succession of the industries workforce and adequate leverage of both existing natural and built assets.

The 'Food Industry' within the Mallee Murray Region is notable for its contribution to Gross Regional Product (Gross State Product). Value-Added data represents the marginal economic value that is added by each industry sector in a defined region. The Food Industry within the Mallee Region of Victoria, that includes Agricultural production and food/beverage product manufacturing represents \$996.483 million per annum. This estimates equates to 10% of all of Regional Victoria's 'Food Industry' Value-added (Figure 3-1).

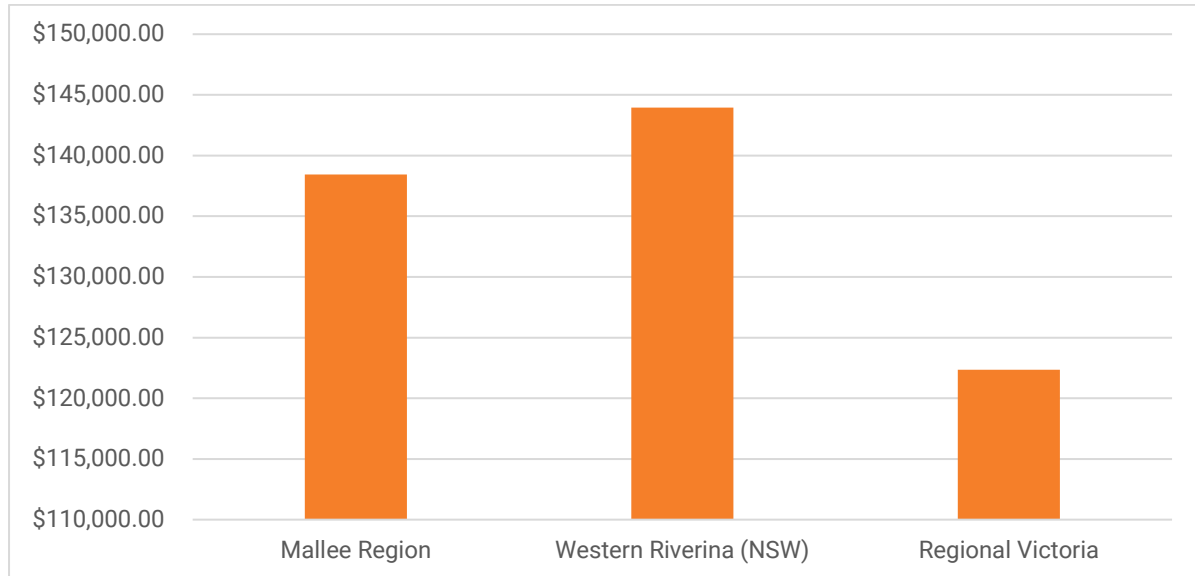
Figure 3-1 'Food Industry' Value Added Murray Mallee Region



Source: REMPLAN – Mallee & Western Riverina Area <https://remplan.co/2Na74qV>

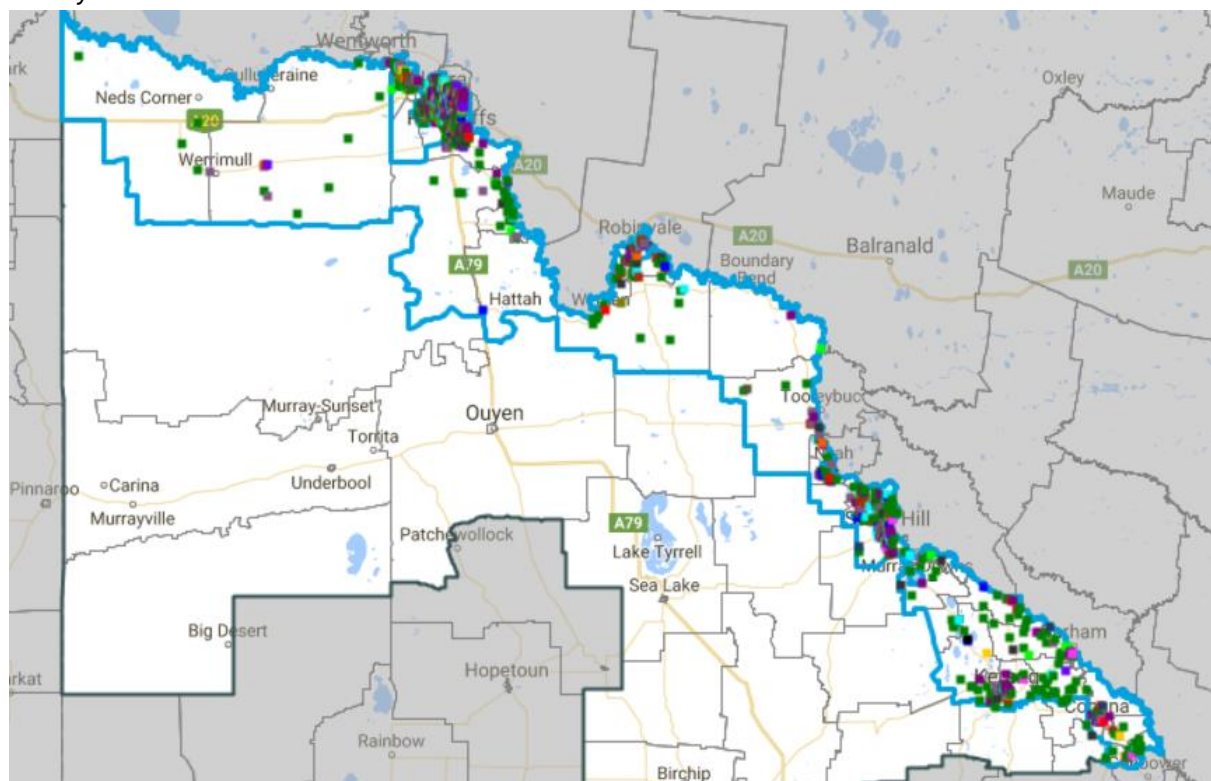
However it is the contribution by worker that sets the region apart. As access to skills and workers have declined, increased productivity on farm is produced with fewer workers. The Mallee region demonstrates very high levels of productivity per worker. This trend extends across the resource based food regions of the Mallee Region (VIC) and Western Riverina (NSW – including Balranald, Murray River and Wentworth LGA's) where measures of value added by worker outstrip estimates for Regional Victoria. Food Industry jobs within the Mallee generate \$138,439 per workers compared with \$122,342 across all of Regional Victoria. The measure is higher again in neighbouring NSW Western Riverina who are estimated to generate \$143,960 of value added per worker .

Figure 3-2 Food Industry Employment - Value-added per workers



Coupled with the significance of the regions food industry is the geographic concentration of settlement and economic activity associated with the Murray River. Fundamentally the River supports both economic activity for business, communities and visitors. The confluence of population, infrastructure and settlements supports business creation (Figure 3-3).

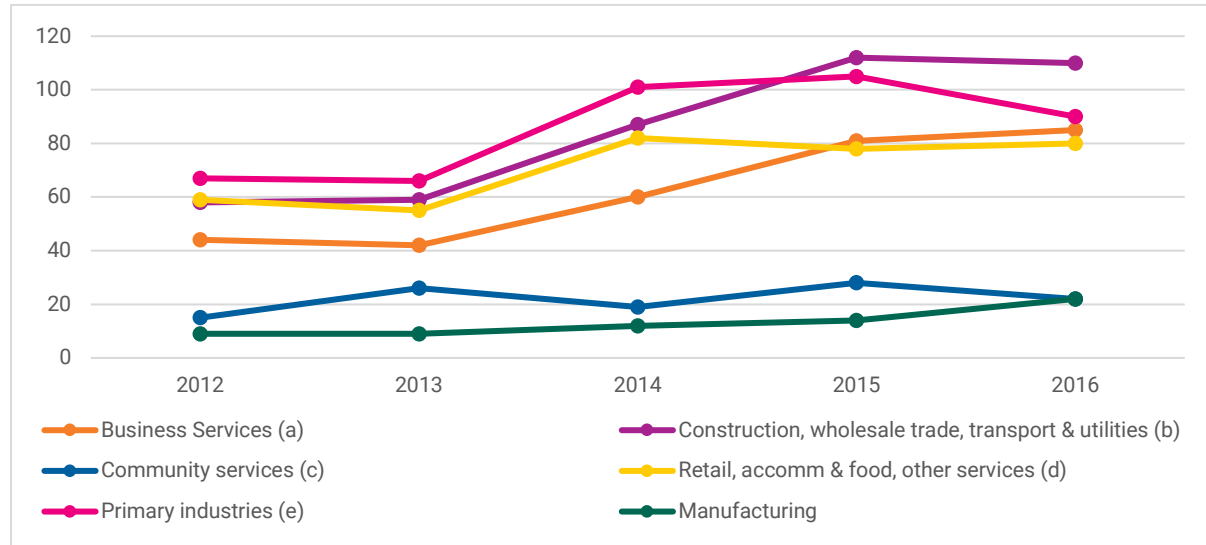
Figure 3-3 GST Listed Businesses GST excluding Trusts & Super Funds in Localities associated with Murray River



Source: ABR Data accessed via DEDJTR (Loddon Mallee) REMPLAN Subscription.

Between 2011 and 2016 – New GST listed businesses in localities proximate to the Murray River and associated townships included: 426 Construction, wholesale trade, transport & utilities, 429 Primary Industries, 312 Business Services, 110 Community services and 354 Retail, accommodation & food, other services.

Figure 3-4 New GST Listed Business (2011 – 2016)

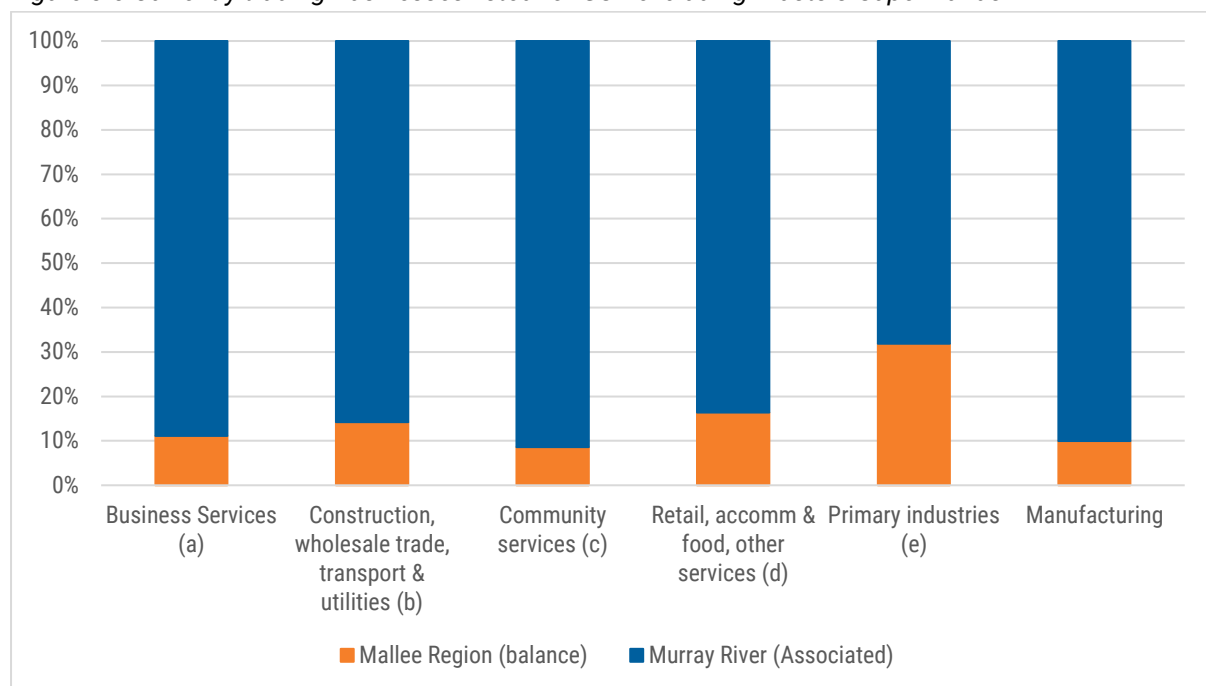


Source: ABR Data accessed via DEDJTR (Loddon Mallee) REMPLAN Subscription.

The unprecedented levels of private investment, particularly associated with secure access to water has supported high levels of large scale corporate development for longer term equity management. Despite these local investments, beyond initial project commencement and some local employment benefits, the same evidence of regional prosperity is not easily observed throughout the regions small settlements.

The regional shift of irrigation water into Victoria's Mallee has promoted significant corporate scale investment and regional export activity. However, the longer term impacts of forecast climate change and water scarcity presents a risk to the region, in particular smaller farm holdings. The geographic centre of economic activity is strongly aligned to the Murray River. As further demonstrated in Figure 3-5, a review of GST businesses within Victoria's Mallee region across key super sectors and associated with the Murray River (within localities that adjoined the river) represent 82% of local businesses.

Figure 3-5 Currently trading Businesses listed for GST excluding Trusts & Super Funds



Source: ABR Data accessed via DEDJTR (Loddon Mallee) REMPLAN Subscription.

The strong correlation between the region's economic prosperity and accessible water including proximity of the Murray River is central to the spatially recognising the influence of geography on regional development outcomes. Regional economic activity naturally extends across State borders, with notable land and resource based economic activity occurring in New South Wales, and a higher proportion of urban settlement and household driven economic activity occurring in Victoria.

The recognition of scale of economic activity within the Mallee Murray Region, the importance of infrastructure investment that responds to production driven demand (not population), the interconnectivity of community and social infrastructure for communities across state borders are all central to establishing the region as a national economic geography through policy.

Fundamentally the link between regional economic policy and water resource planning is central to long term prosperity. Accessible and secure access to water underpins both food related industry (Agriculture & Manufacturing) as well as the regions visitor economy.

3.1.3 Opportunities

Regional Economic Policy

- Package the Mallee Murray Region as a unique national economic region to support and attract initiatives for across Victorian and New South Wales State Government and Federal Government to support infrastructure investment. The need to link strategic planning and policy with investment in business and economic enabling infrastructure should support future private investment throughout both the Victorian and NSW components of the Mallee Murray Region.
- Building on the current momentum in cross border relations, the development of a broader Regional Economic policy should incorporate both State and Federal Government support to develop greater consistency in regulatory environment to benefit job creation and private investment activity.
- The development of a consistent investment and brand strategy for the region will be an important outcome for the establishment of a national economic region through policy.
- The region performs an important national role. While not associated with population growth like metropolitan or regional centres, the nationally significant contribution in the Mallee Murray Region across food related industries demands an equitable infrastructure investment response by government. Future investment criteria should recognise the regions increased levels production and greater Value-add contribution per worker. In essence the region contributes significantly to Gross Regional Product, and infrastructure delivery should recognise this contribution by business and industry in the region.

3.2 Priority 2: Significantly enhance digital connectivity in the Mallee Region

Policy alignment: Smart Cities & National Employment Innovation Clusters (NEIC) | National Innovation Agenda | Future Industries | Mobile Project Round 4

3.2.1 Summary

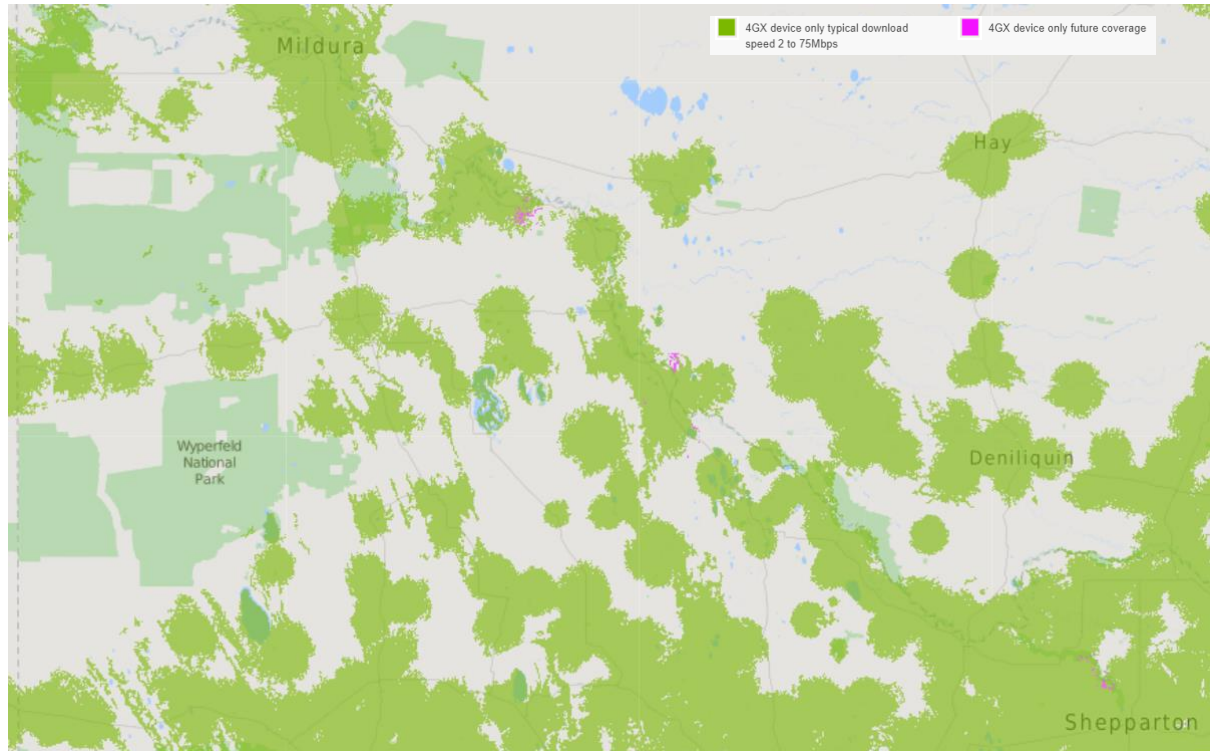
- The link between secure, reliable, cost effective and efficient digital connectivity infrastructure is fundamental to improved regional business opportunities.
- Digital planning for regional Victoria's 9 Regional Partnerships commenced in April 2018.
- The Mallee Regional Partnership has identified digital connectivity as a priority for the region.
- Digital connectivity underpins liveability and public safety and has the potential to drive economic productivity.
- Research has indicated that a 25% increase in Gross Value of Production (GVP) in the Agriculture sector could be obtained through 'unconstrained digital agriculture'.
- Advances in technology including the "internet of things" via improved broadband or Low Power Wide Area Networks (LPWAN) are shaping the future of regional industries.

3.2.2 Context

The link between increased productivity and reliable access to digital connectivity remains a pervasive issue for the Mallee Region. There is a fundamental need for improvement in digital connectivity to ensure regional investment across the region. Digital infrastructure investment is required to meet latent industry sector demands across agriculture, health, education and the local government sector.

The region has significant blackspot issues that affect emergency services, remote communities and local economic development. Digital connectivity is a priority for the region. As identified through 4G mapping of the region provided by Telstra, the broader Mallee Murray Region extending regional areas of Victoria and New South Wales contain significant areas that are devoid of high speed mobile network coverage (Figure 3-6).

Figure 3-6 Telstra Network Coverage Map



Source: <https://www.telstra.com.au/coverage-networks/our-coverage>

Research suggests ‘unconstrained digital agriculture’ could achieve a 25% increase in Gross Value of Production². There is clearly a need to position the region for high speed mobile network investment beyond the coverage extended by existing 3G and future 4GX networks.

While advocacy for improved infrastructure is essential, the region must ready themselves for new opportunities, developing skills in digital literacy, addressing industry data/information standards to match technology requirements (data standards).

Industry needs to equip themselves to leverage insights from high speed and up to date data that informs investment for their markets and enables improved management and digital communication of brand and regional quality.

3.2.3 Opportunities

Agri Tech and IoT

- Global momentum in Agri-tech that links research, data and increased levels of automation requires a co-ordinated strategy. The region is well positioned to pilot investment in networks, IoT and data sharing to grow the food industry. Internet of Things (IoT) on farm demonstration trials have been announced to commence on 1st July, 2018. Local learnings based on the Birchip Cropping Group will be essential.
- While advocacy for improved infrastructure is essential, the region must ready themselves for new opportunities, developing skills in digital literacy, addressing industry data/information standards to match technology requirements (data standards).

² CRDC (2017) Accelerating Precision Agriculture to Decision Agriculture – Enabling digital agriculture in Australia.

- Industry needs to equip themselves to leverage insights from high speed and up to date data that informs investment for their markets and enables improved management and digital communication of brand and regional quality.

Infrastructure investment - Technical feasibility

- Opportunities for leveraging railway corridors for access to fibre optics throughout the region require further investigation.
- Advances in technology including the “internet of things” via improved broadband or Low Power Wide Area Networks (LPWAN) are shaping the future of regional industries. Further trials and opportunities for development of LPWAN in existing high need agri-business districts should be explored for funding and support. Research to demonstrate the marginal economic benefit of infrastructure investment should underpin the proposal.

3.3 Priority 3: Addressing demand for skills and education

Policy alignment: Skills First | Victorian Priority Sector Strategies | Gonski 2.0 | TAFE Free

3.3.1 Summary

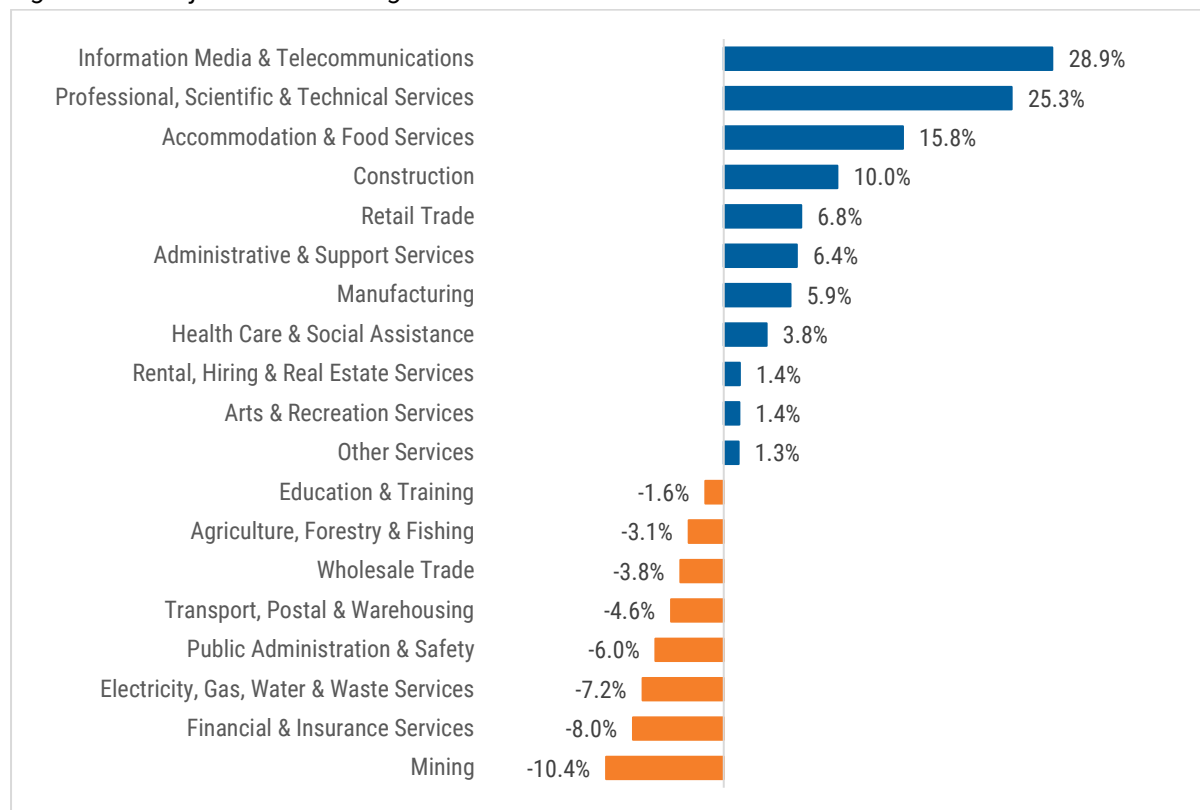
- The region requires the right skills to support regional business growth.
- Despite growth in regional employment, local employers continue to report difficulty attracting the right skills.
- There is a disconnect between the demand for skills in the region and the skills available to support industry growth.
- This skills deficit is compounded by a local workforce that has a higher proportion of lower income earners.
- Ageing and changing workforce demographics will lead to additional demand for skills, for example: 'Working age' forecast to grow, but +65-year-old persons represent 25% by 2031.

3.3.2 Context

The region requires the right skills to support regional business growth. There is a disconnect evident between the demand for skills in the region and the skills available to support industry growth.

3,432 new jobs were created in the Mallee over the most recent Census period (2011 – 2016). The greatest concentration of new jobs was experienced in the 'Information, Media and Telecommunications', 'Professional, Scientific & Technical Services', 'Accommodation & Food Services' and 'Construction' in the region, accounting for 80.1% of all new jobs (Figure 3-7).

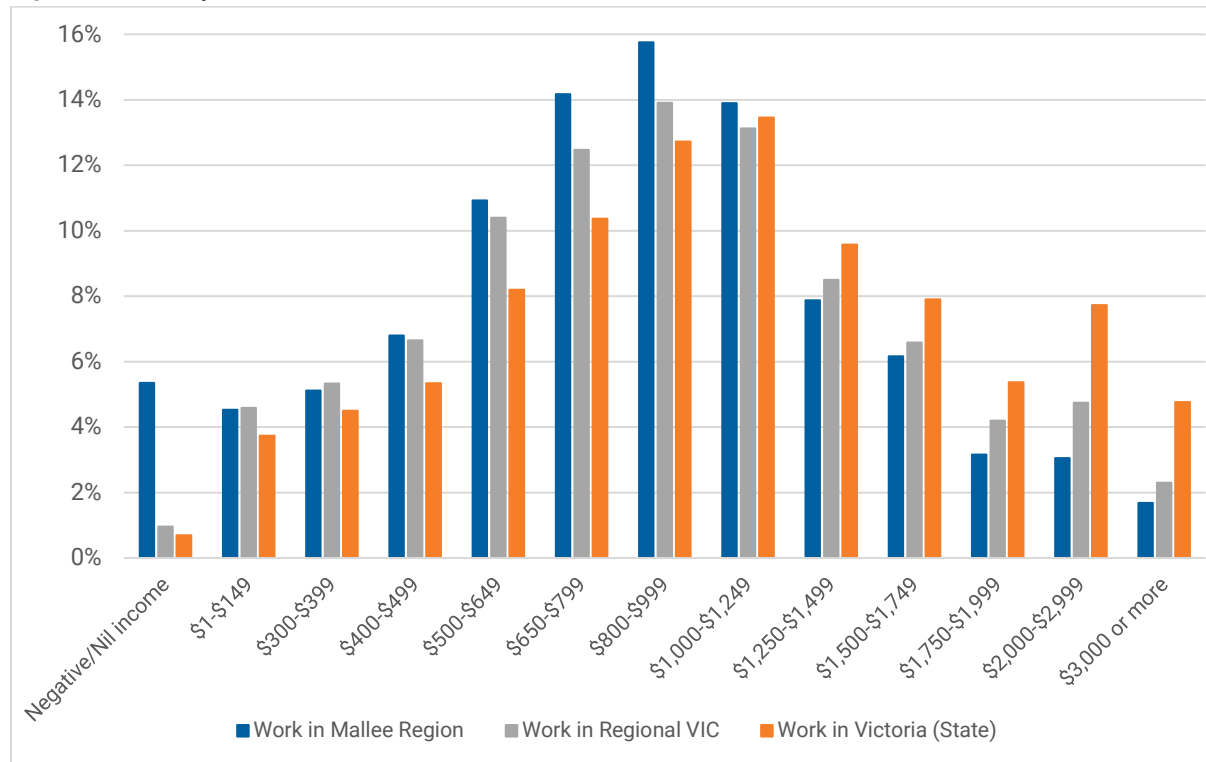
Figure 3-7 New jobs in Mallee Region 2011 to 2016



Source: Census (2016) Place of Work.

Despite the growth in regional employment, anecdotal evidence stated that local employers continue to report difficulty attracting the right skills. This skills deficit is compounded by a local workforce that has a higher proportion of lower income earners. 50,551 workers representing 55.42% of the region's workers earn less than \$999 per week. This compares with 49.1% of total Victorian workers who earn less than \$999 per week (Figure 3-8).

Figure 3-8 Weekly income of local workforce



Source: ABS (2016) Place of Work, compiled by REMPLAN.

Demand for workforce varies across the nation. There has been a clear focus on a future workforce that is adaptable, with high emotional intelligence and focussed on problem solving & communication. This workforce research highlights the need to skill up and manage the impact of automation and technology that will mostly impact on lower order employment³.

These insights about the future workforce are informed by work undertaken by the Foundation for Young Australian's who identified new job clusters focussed on skills, not technical disciplines (Figure 3-9). This reflects the changing way in which Australia's future workforce will engage.

³ Productivity Commission (2016) Digital Disruption: What do governments need to do?

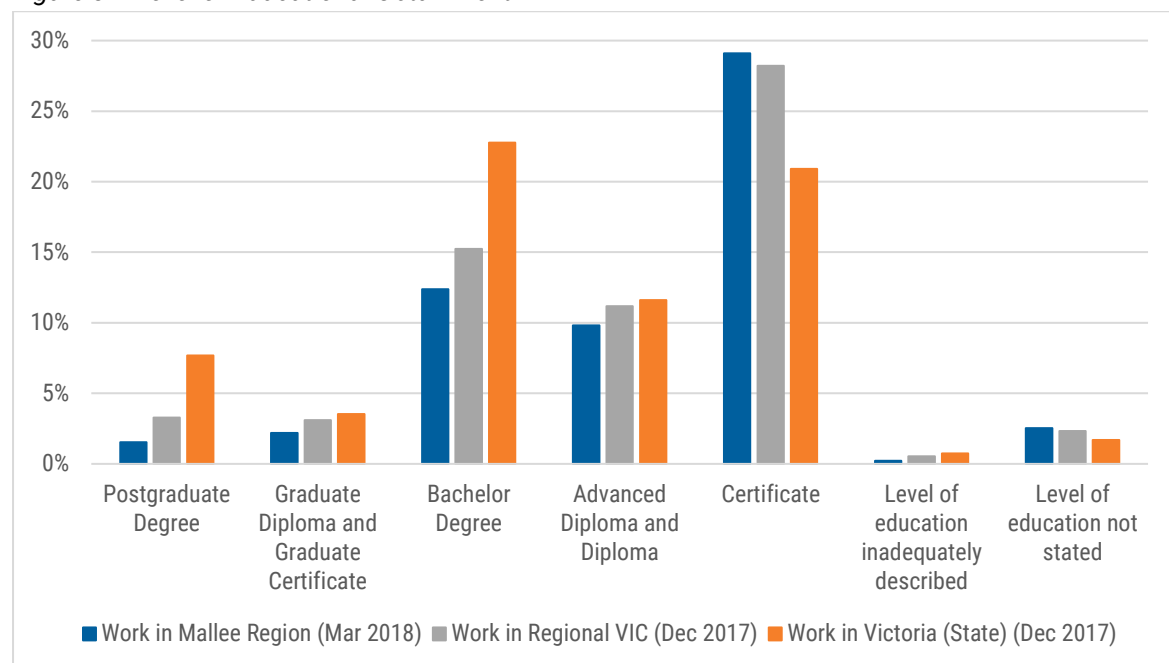
Figure 3-9 New Job Clusters To Help Young People Navigate The New Work Order



Source: Foundation for Young Australians (2016)

However, while skills have been identified as a focus area for employers, over technical capabilities; level of education attainment is a good indication of weekly income as well as skills in adaptability, emotional intelligence, problem solving, and communication. Within the Mallee, there is notably lower levels of advanced degrees and associated levels of educational attainment.

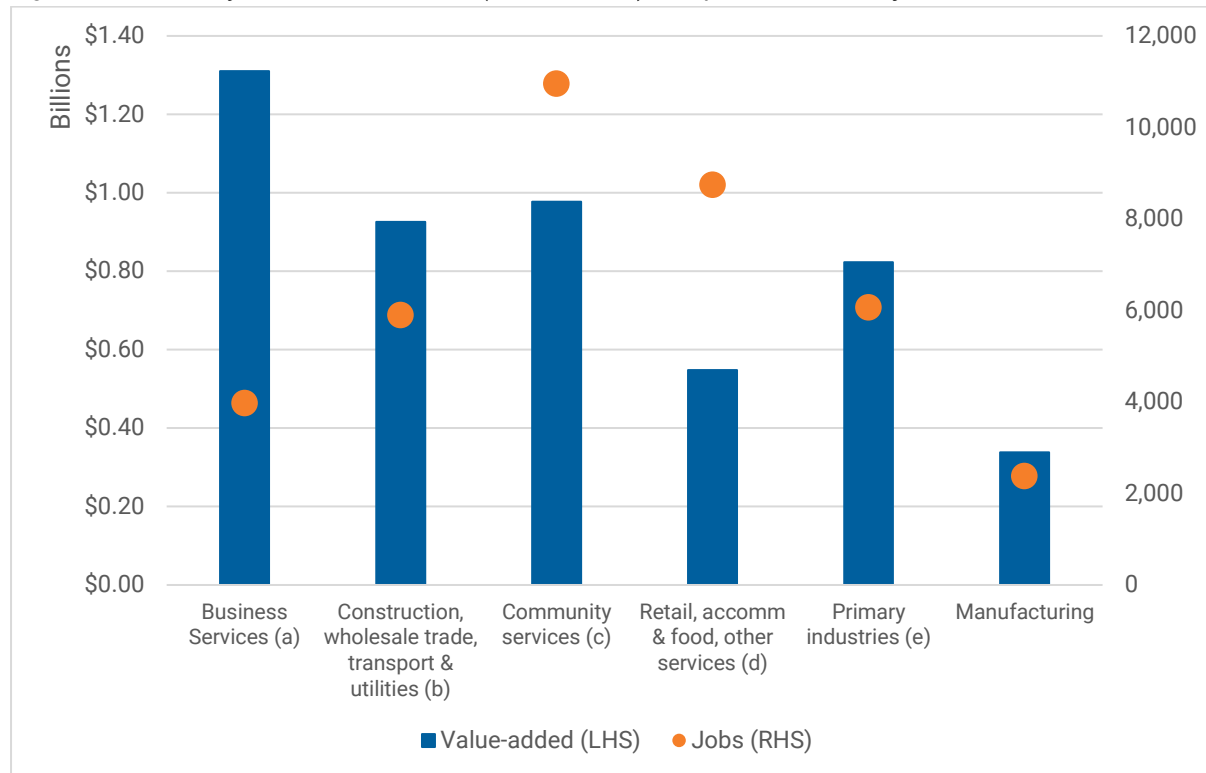
Figure 3-4 Level of Educational Obtainment



Source: ABS (2016) Place of Work, compiled by REMPLAN.

This situation of matching skills to high performing economic industries is also evident when comparing industries relative to the contribution to Gross Regional Product, by Value Added, compared with local employment levels. As outlined in Figure 3-5, there is opportunity to expand employment levels to increase economic contributions with a focus on Business Services, Primary Industries and Manufacturing.

Figure 3-10 Industry contribution to GRP (Value-Added) compared with local jobs



Source: REMPLAN, Mallee Region dataset.

Job vacancy data supports these insights suggesting Victorian businesses are unable to fill positions requiring Certificate level education attainment of three and/or four. There has been an increase in the job vacancy rate (the ratio of vacancies per 1,000 total positions) from 10.8 per 1,000 jobs in 2013 up to 13.3 per 1,000 jobs in 2017⁴.

Despite the focus on future higher order employment and future job clusters, this same demand for Certificate Level 3 or 4 is replicated in work completed by the Department of Education and Training. Sustained demand for up to 7,000 training positions have been identified in the occupations of Community & Personal Service Workers; Clerical & Administrative Workers; Sales Workers; Labourers and Managers (Figure 3-6).

⁴ Department of Treasury & Finance (2018) 2018-19 Strategy & Outlook. Victorian Budget 2018-19.

Figure 3-11 Key occupational training needs in Mallee Region – maximum requirements

Retail Managers	Kitchenhands	Packers	Meat, Poultry & Seafood Process Workers
Commercial Cleaners	Checkout Operators & Office Cashiers	Sales Assistances (General)	Bookkeepers
Receptionists	General Clerks	Waiters	Child Carers
	Education Aides	Aged & Disabled Carers	

Source: Victorian Skills Commissioner (2017) Regional Skills Demand Profile, The Mallee.

Targeted skills and training is required to support the largest regional employing growth industries of Health Care & Social Assistance; Construction; Accommodation & Food Services; Education & Training; Agriculture, Forestry & Fishing; Administrative & Support Services; and Manufacturing.

With young people moving away from regional areas to pursue education and career options, an aging farming workforce and identified succession issues and family conflicts within the industry; agriculture is not well marketed as a career option. Anecdotal feedback received has identified the lack of young people identifying agriculture as an industry they plan to work in. The industry lacks defined schooling/TAFE opportunities and there is a perception of the industry being challenging. Barriers to entry within the industry are access to capital, and skills.

3.3.3 Opportunities

Opportunity exists to promote the employment benefits in the agricultural industry including tourism, health, liveability, sustainability, opportunity for wealth generation, value add opportunities, and workforce development. The following initiatives provide a guide for identification for catalytic investment.

Whole of Region Skills Assessment

- Build on the Skills Commissioner assessment of the Mallee to include Buloke/ Gannawarra at its next review.

Targeted vocational training

- Develop targeted programs to support the largest employing industries of Agriculture, Food product manufacturing, Construction and Health & Social Assistance including a particular focus on implementation of pathway development for Years 7-10 students.
- Strengthen link between local industries, schools/TAFE/universities and include young people in the solution. Anecdotal evidence suggests opportunity exists to develop projects in collaboration with SuniTAFE, local cadetships and school based apprenticeships.

- Leverage 2018 – 2019 budget commitment for a four-year \$109 million career education reform program - career and pathway training decisions for student, focus on career exploration workshops and improving engagement with industry.

Work integrated learning

- There is a need to better match business skill needs to training on offer – students are being trained for jobs that don't exist and not for the skills that are needed. Improving the link between workforce skills strategies and demand for local workforce and capability will be important.
- Opportunity exists to communicate future needs of the workforce and career advice connected to local industry. The success in other regions of building collaborative industry networks that work together to support skills development should be explored across the Murray Mallee Region.

3.4 Priority 4: 'Liveability' infrastructure to support local jobs

Policy alignment: *Mallee Regional Growth Plan | Victorian Priority Sector Strategies | National Innovation Agenda | Future Industries | Health Infrastructure Fund | Community Sport Infrastructure Fund*

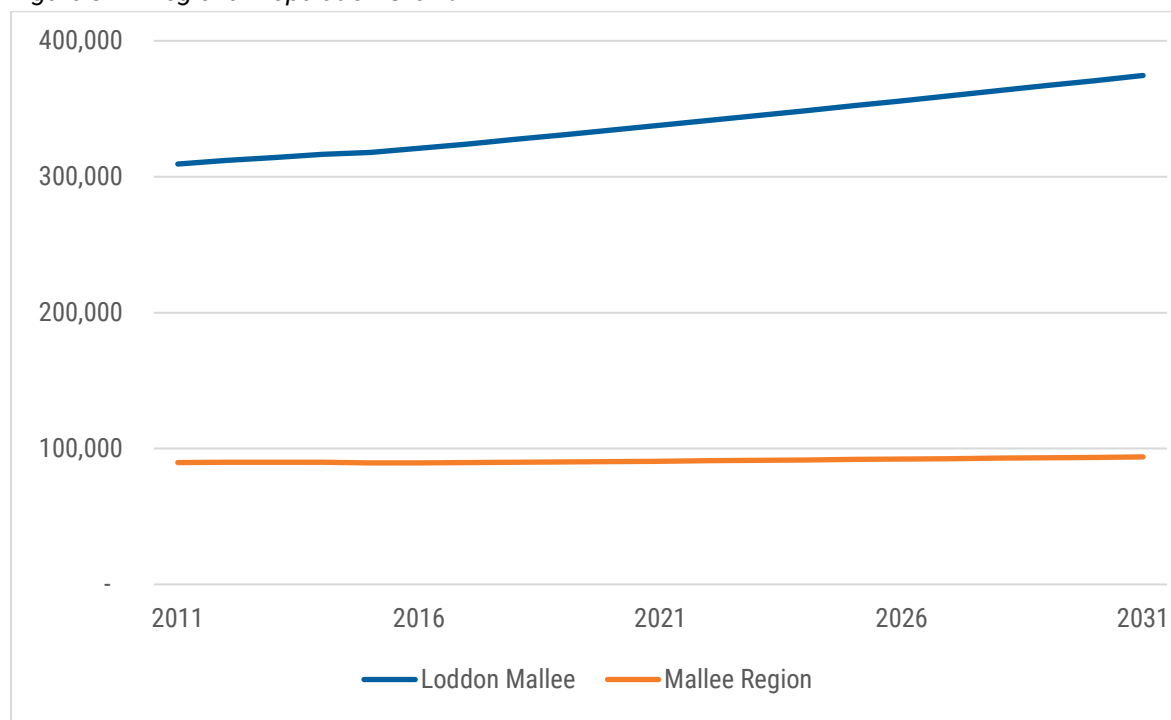
3.4.1 Summary

- Condition of local infrastructure and services combined with distance from major centres is impacting on the region's ability to access workers.
- Localised market failure is constraining appropriate housing in key economic locations.
- The Mallee Region is projected to decrease its proportional share of population to 25% in 2031.
- Liveability underpins investment decisions and attracts not only workers but partners and families who can support broader social and community capital in the region.

3.4.2 Context

In order to secure a stable future workforce, the Mallee needs to attract new residents in the region. Long range forecasts suggest a proportional decline in the region's population. The Region is forecast to be home to close 375,000 people in 2031. The Mallee Region is projected to decrease its proportional share of population within the RDA Loddon Mallee region to 25% in 2031 (Figure 3-12).

Figure 3-12 Regional Population Growth



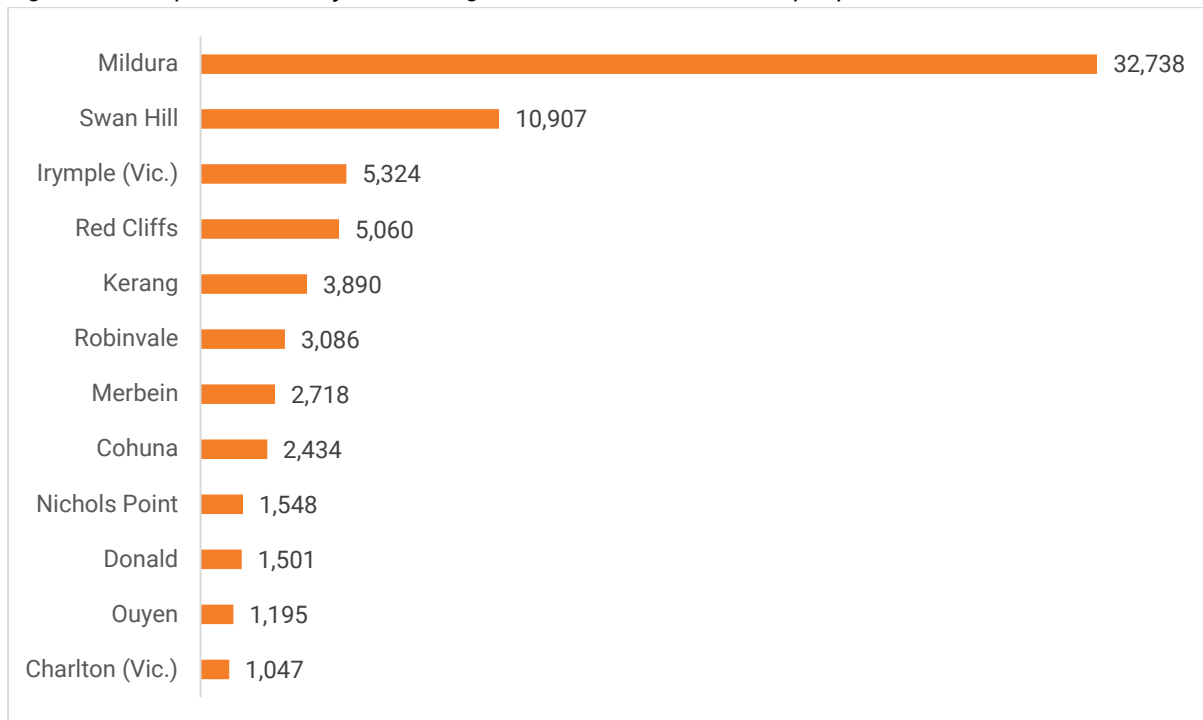
Source: Mallee Region (VIF 2016, Compiled by REMPLAN)

By strengthening the arts and culture of the community, and investing in infrastructure such as housing, schools and hospitals, the liveability of the region will be increased. Opportunity exists to advocate for strong investment in economy-enabling infrastructure.

Residential areas are concentrated around dryland small towns. Increasing transport options, social and community events in the areas will assist in increasing local liveability. The key settlements throughout the Mallee support 78% of the region's population. These include all settlements with a population of over 1,000 people (Figure 3-13). However, the settlement pattern of the region is notably dispersed. Servicing and maintaining the liveability of the region across many small townships is an

investment challenge not limited to government. With 164 localities (gazetted suburbs) supporting populations of less than 100 people in each geography there is clearly a range of small locations.

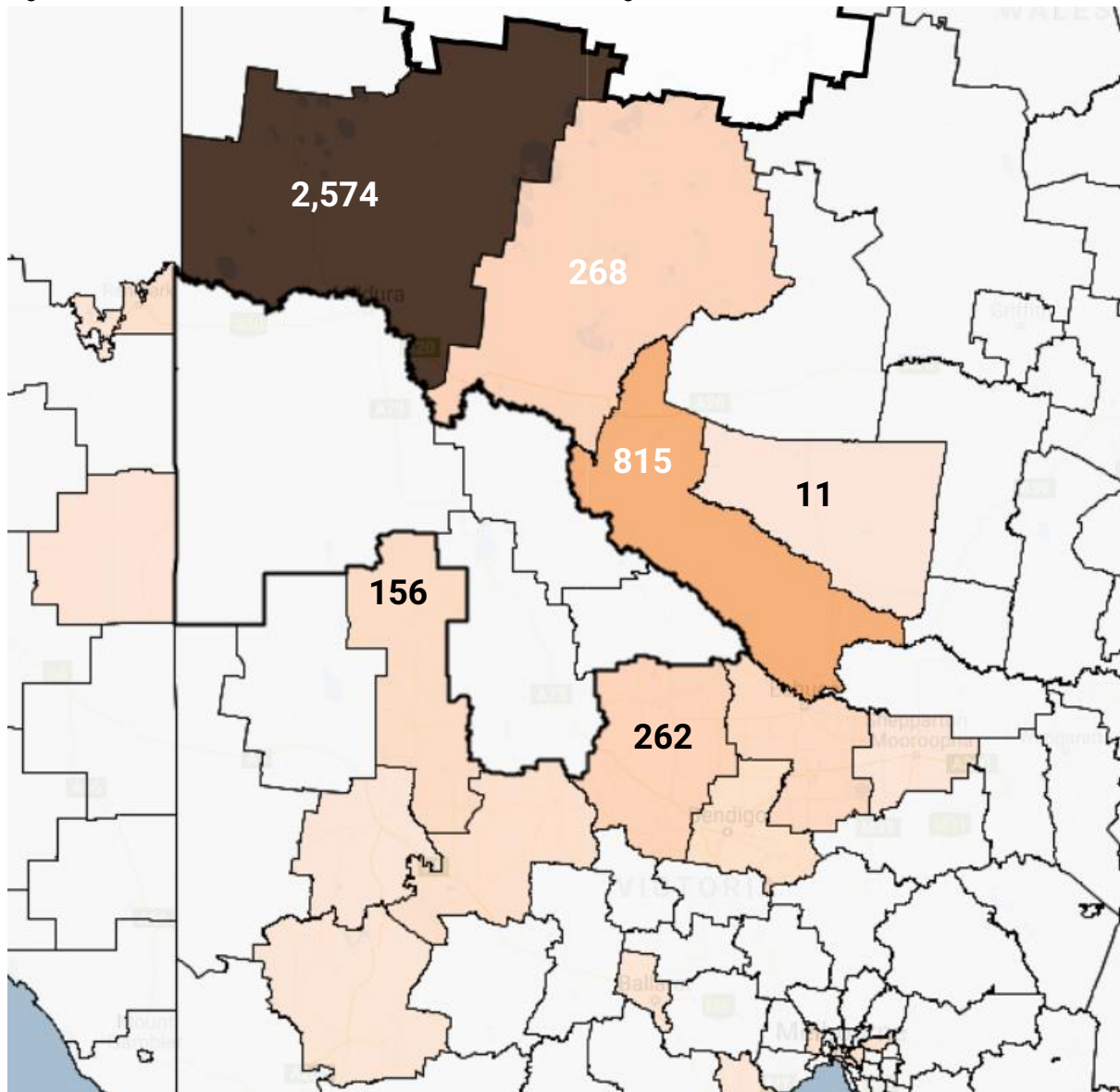
Figure 3-13 Population of key Mallee Region settlements over 1,000 people



Source: Place of Usual Residence (ABS) 2016.

There is a significant number of local workers living outside the region with 'no fixed address'. These local workers are generally working on short term projects in the construction industry. Housing investment is required to support population growth and stability and improve reputation and confidence in our region.

Figure 3-7 Local workers who live outside of the Mallee region



Source: ABS 2016, REMPLAN Workforce Analysis.

While access to high levels of liveability and strong social and community infrastructure underpins all communities, the need for solutions is particularly acute throughout areas of Swan Hill Local Government Area. The unprecedented levels of horticultural expansion that demand local employment is a result of key local commodities including:

- 70% of Australia's Almond crop produced within a 90km radius of Robinvale;
- 80% of Australia's Olive oil production through Boort and Boundary Bend groves
- 65% of Australia's table grapes produced in the Robinvale / Euston region
- 6,000 acres of carrot growing (estimated as largest in Australia)
- 2,000 acres of lettuces grown across famrs at Robinvale and Pearcedale farm
- 95% of Australia's Pistachios crop is processed at CMV Farms Robinvale⁵

⁵ Outcome Report from the Robinvale - Euston Vision of the Region 2025 Dinner

3.4.3 Opportunities

Great small towns

- The dispersed and often modest scale of many townships throughout the Mallee presents a significant challenge for renewal and investment. However, investment in towns promotes pride and aspiration and is good for both visitors and residents.
- Opportunity to explore the role of Co-Design, Place-making and citizen led township renewal should be explored. Capacity building and strategy should underpin redevelopment led by local community.

Social and Community Infrastructure Needs

- Understanding community and social infrastructure needs is fundamental to securing and enhancing liveability within a region. Further assessment is required to ensure key settlements are adequately supporting local employees and residents. Cross border governance models exists in the provision of health services and could be further explored to ensure adequate funding support in key settlements that service broader regional catchments than populations defined by State borders.
- Housing Studies are currently underway in Robinvale. Implementation of the findings of this study will assist in identification of strategies to overcome issues of housing supply and housing preferences to support current and future workforce demand.

Explore co-investment opportunities

- The local investment in horticultural activity, increasingly an automated and mechanised activity enables the generation of significant economic activity that is not adequately realised in local communities. This is incongruous. Development of industry networks that support issues around workforce development and training requirements may also provide a means for exploring the role of co-investment by government and industry in the long term presentation and infrastructure requirements of local towns in the region.

Leverage art and cultural industries

- Strengthen 'regional' links to arts, innovation, training – building on strong cultural connections, local arts and cultural activity to enhance liveability and attract future residents.
- The strong connection with local indigenous groups should be explored to recognise culturally significant traditions and landscapes but also promote enterprise. For example, there could be greater Indigenous involvement in flood plan management to involve skills, connect people to their environment, employment programs, tree planting.
- There is a need support development of skills by immigrants to feel supported and stay locally. Successful examples of this in locations such as Nhill (Love a Duck) have included support for English language, and access to health and education programs to support new comers within the region.

3.5 Priority 5: Growing agriculture and local value adding

Policy alignment: Food & Fibre Sector Strategy | Future Industries | National Innovation Agenda

3.5.1 Summary

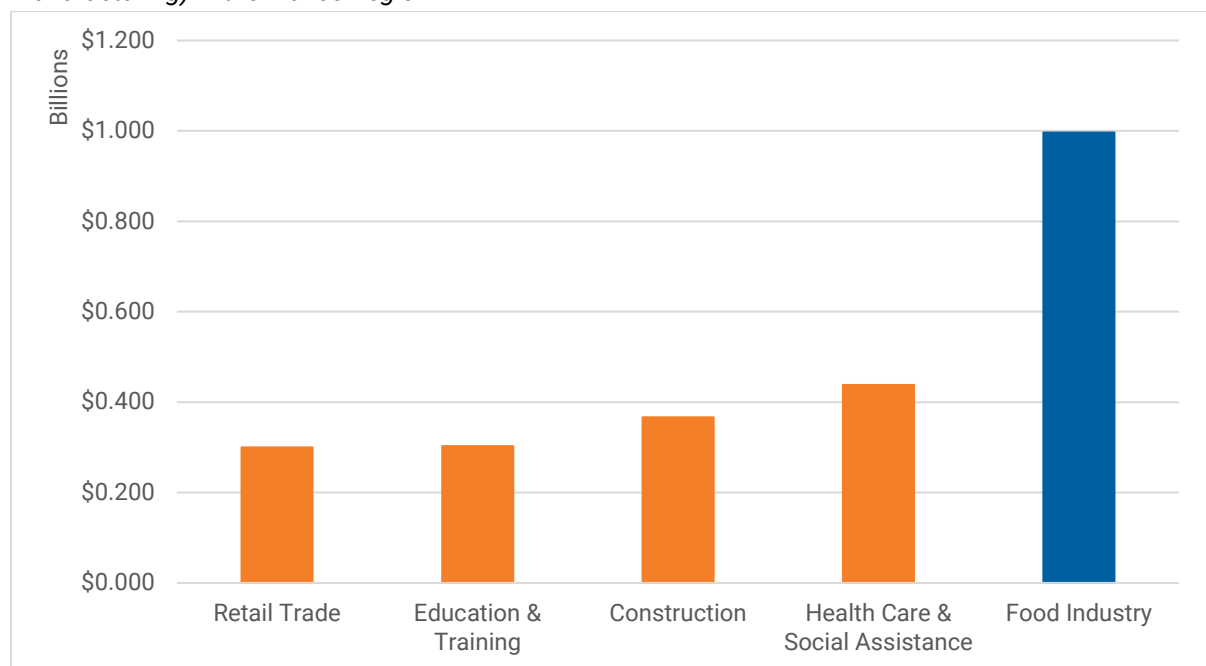
- The strength of both the primary and secondary food sector is directly reflected through its regional economic performance.
- The Food Industry has a total annual revenue of \$2.382 billion (23.3%) and supports close to 7,000 local jobs. The sector is significant and contributes almost \$1.000 billion or 20.2% toward Gross Regional Product (GRP).
- The Food Industry provides a higher proportional share of GRP than Health Care & Social Assistance, Construction, Education & Training and Retail Trade in the region.
- Broadacre cropping and irrigated agriculture drives the Mallee's economy, with the area surrounding Mildura, Robinvale and Swan Hill among Victoria's most productive horticultural region.
- The Mallee region is intrinsic in the Murray Darling mega region that produces 65% of Australia's Irrigated land; 1/3 of food supply & 40% of national agricultural revenue.

3.5.2 Context

The importance of the 'Food Industry' that includes representation of both primary production (Agriculture) and secondary and tertiary value-adding through local food manufacturing is strategically important for the region. As outlined above in the discussion regarding recognising the region for high levels of value-added by worker.

Value-Added data represents the marginal economic value that is added by each industry sector in a defined region. The Food Industry within the Mallee Region of Victoria total value-added is estimated at \$996.483 million per annum. This estimates equates to 10% of all of Regional Victoria's 'Food Industry' Value-added.

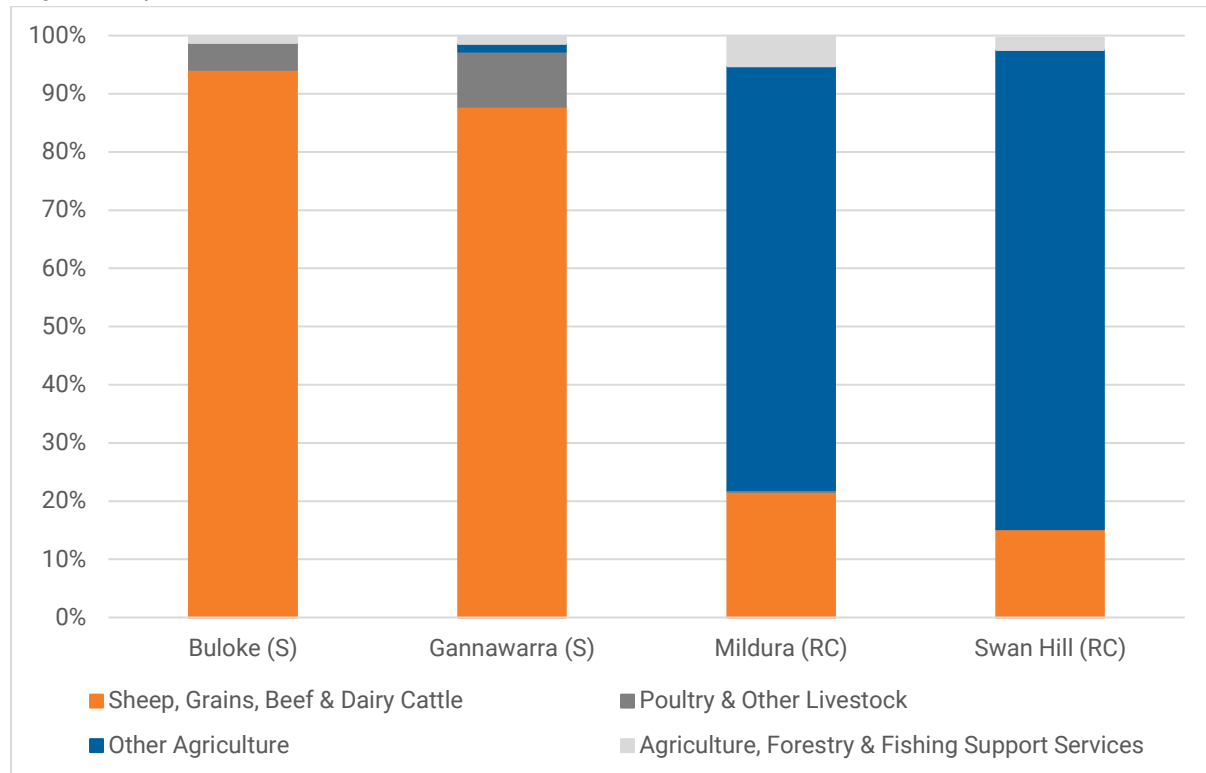
Figure 3-14 Contribution to GRP (Value Added) Food Industry (Agriculture, Food & Beverage Manufacturing) in the Mallee Region.



Source: REMPLAN Economy Analysis

The region is a net exporter of goods. The level of export demand is driven predominantly through Agricultural and manufacturing exports. As identified in Figure 3-15 the composition of exports varies with large areas of dryland commodities associated with Gannawarra and Buloke Local Government areas, while the access to water through irrigation districts and closer proximity to the Murray river supports increased levels of export through 'Other Agriculture' that incorporates cropping commodities including stone, citrus and nuts.

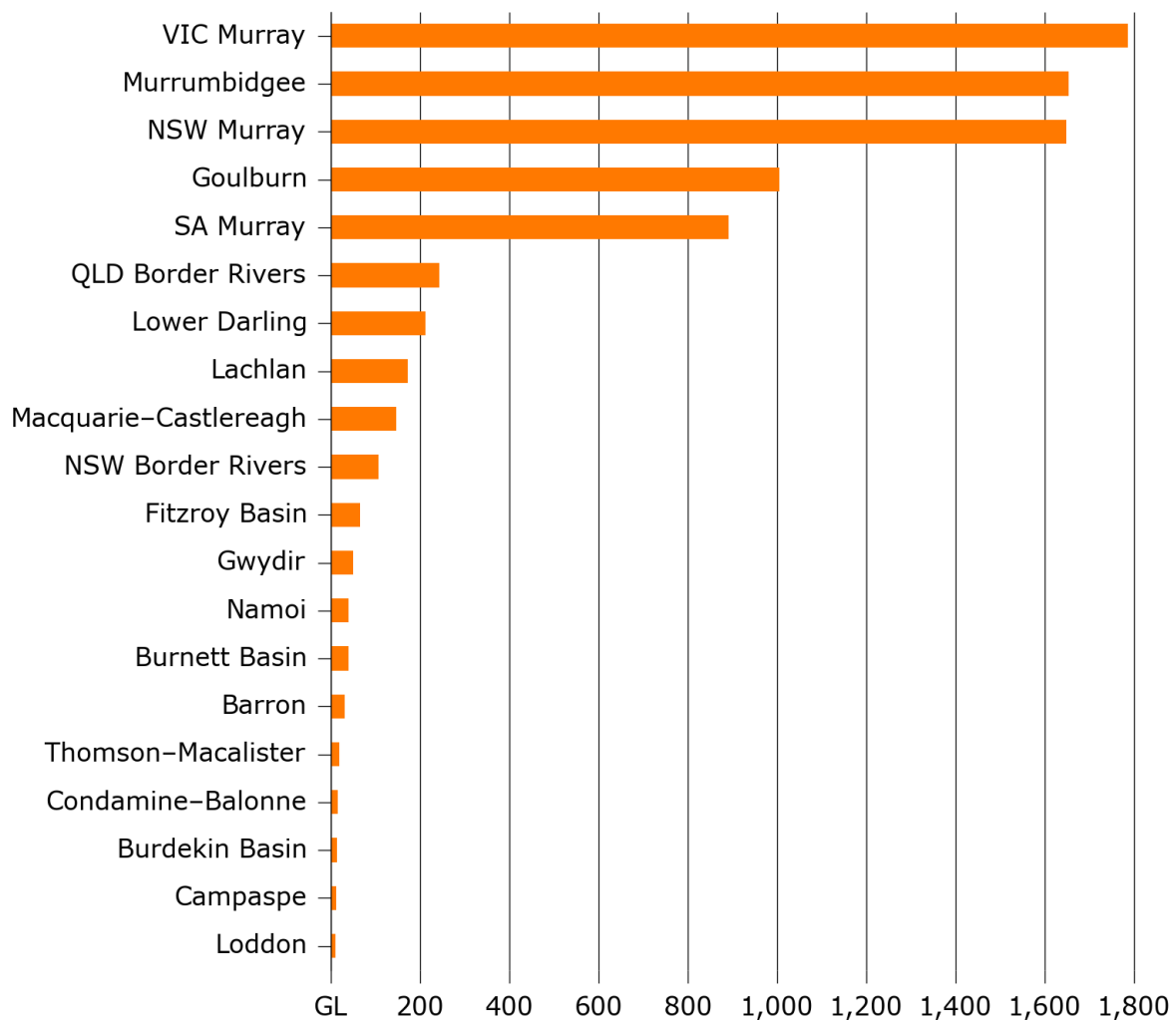
Figure 3-15 Regional Exports in Agriculture Agriculture, Forestry & Fishing represent \$1.307 Million in Regional Exports



Source: REMPLAN Economy Analysis

The access to water and increased demand within the southern Murray Darling Basin has supported significant increase in the food industry within the region. Underpinned by surface water allocation trading, the Victorian Murray water systems, and adjoining Murrumbidgee and Goulburn systems were responsible for the bulk of water trading during 2016-17.

Figure 3-16 Surface water allocation trade, by water system, 2016–17



Source: ABARES; Australian Bureau of Statistics

Consistent with this data is reporting that summarised Mallee Catchment Management Authority and Goulburn Murray Irrigation District (GMID) data to demonstrate the impact of transferable water throughout Northern Victoria. Since 1997 through to 2015, increases in irrigable horticulture throughout the Victorian Mallee from 39,700 to 73,000 ha. While at the same time horticultural plantings in the GMID have remained stable and constant⁶.

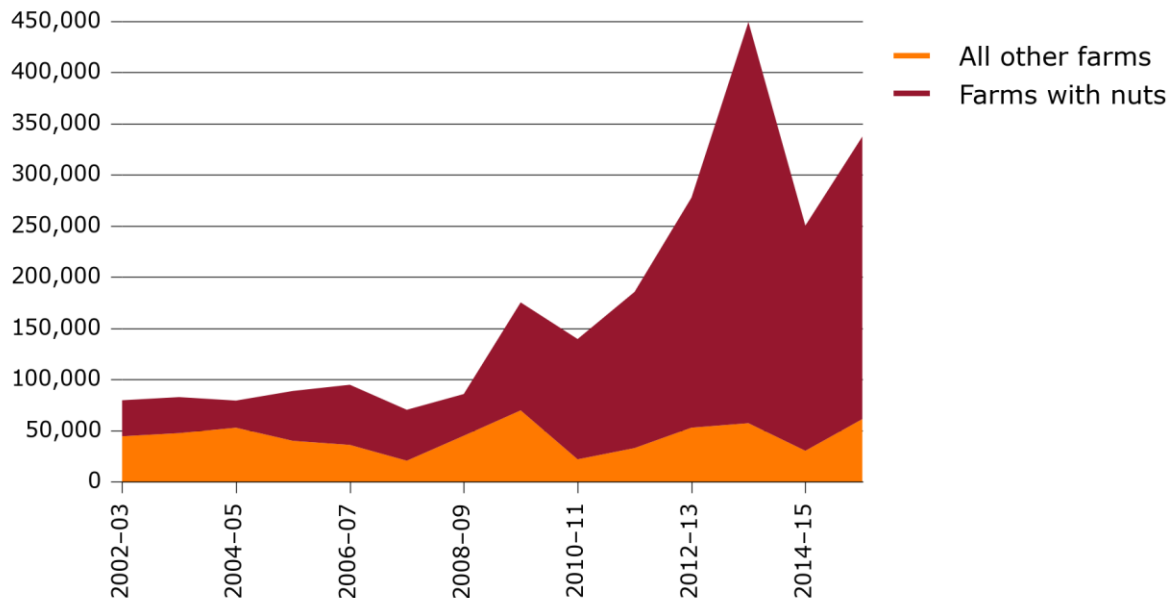
Review of data regarding net imports of water allocations again demonstrates the reliance on water coming into the Mallee Region. In 2016-17 the Victorian Murray water region reported a net trade of 149 gigalitres. Fundamentally this demand for water reflects significant investment in longer term plantings across horticultural farms.

⁶ TC&A & Frontier Economics (2017) Social & economic impact of the Basin Plan in Victoria.

Figure 3-17 Surface water allocation net inter-regional trade flows Murray–Darling Basin, 2016–17

Further assessment of the demand for water generated specifically through both Farms with nuts and All other farms indicates the increased demand for water use from farms in the Victorian Murray water system below the Barmah Choke.

Figure 3-18 Water use by farm type, Victorian Murray below Barmah Choke, 2002–03 to 2015–16



Source: ABARES; Australian Bureau of Statistics

While it is clear that the access to water has supported significant local investment in farm capital, particularly at corporate farm scales. It demonstrates the food industries reliance on access to water to support significant regional economic development outcomes. Modelled analysis of the impact of climate change on Australian food exports has previously identified this risk to local agricultural production and food product manufacturing. While Australia's total contribution to global food supply is modest, agricultural exports are strategically important within the global regions of Asia, South East Asia and Oceania (AU, NZ and Pacific).

The recent prosperity and confidence in the Mallee Region's irrigated horticultural base must recognise the risk of future climate shock within the system and ensure adaptation and management of long term food industry assets are resilient and viable within the region.

Recent transport infrastructure investment and renewed farm feasibility are also driving opportunity for future horticultural based economic development.

The Murray Basin Freight Rail Project will upgrade the lines in the Murray Basin from broad gauge to standard gauge, and in particular the Ouyen to Murrayville line from broad gauge to standard gauge with axle loading of 19 tonnes per axle. Additionally, the project provides renewed freight connection between the Port of Portland and the Murray Basin, via standardised rail tracks. Opportunities for grain, pulses and mineral sands to be transported to Hamilton from Manangatang, present significant opportunities and projects that actively leverage the infrastructure investment should be identified and supported.

Additionally, recent work to unlock the redevelopment of the Sunraysia Pumped Districts builds on the momentum of investment opportunity in the horticultural sector and provides a framework for the rejuvenation of the pumped irrigated districts in the northwest of the Mallee Region.

3.5.3 Opportunities

Rural Innovation

- Momentum in the establishment of Innovation Hubs and Agri-tech investment is underway and has the potential to accelerate local economic development opportunities. Building on the Mallee Regional Innovation Centre to unlock further innovation opportunities in horticulture that support education, research, workplace skills and ultimately private investment will be important. The scale of the region may necessitate satellite development of this model throughout other locations.

Renewing Irrigation Districts

- The Sunraysia Rejuvenation Project presents opportunities to rejuvenate previously pumped irrigated districts and further expand activity in the north west of the Mallee Region. Further investment and targeted rejuvenation of sites that meet established criteria should be supported.

Integrating freight and export opportunities

- Export and Value-add demand assessment is required to better understand the current role of Port of Melbourne within the region and future opportunities for direct export and value-adding (eg. Food product manufacturing) prior to commodities leaving the the region. The assessment should also explore opportunities for value-adding on farming areas to diversify income (eg. Containerising activities at Moulamein Grain Co-Op)
- Murray Basin Freight Rail Project provides dedicated opportunity for increased tonnage direct from the Murray Basin to port. Identification of opportunities to actively leverage the investment through land use change, further transport infrastructure development (eg. Intermodal site) in association with this regional infrastructure investment should be prioritised.
- Subject to export and value add demand assessment complete feasibility study for creation of the Mildura inland port infrastructure and services to facilitate export (quarantine, AQIS, fumigation).

New market opportunities

- The region should embrace the notion of innovation through horticulture. Linkage between recent policy changes for development of medicinal cannabis for example presents opportunities for vertical integration from production, to research to pharmaceutical product manufacturing within the Mallee region.

Develop adaptation strategies

- The long term reliability on water for regional prosperity will present a risk to land managers who are unable to respond to market fluctuations in water pricing or future drought conditions. Industry must be ready to respond to probable periods with lower levels of accessible water for irrigation and production through development of climate change adaptation strategies.

Threats

- The expansion of horticulture in the Mallee Region has encouraged significant investment that is now extending into areas of the Western Riverina (NSW). However, should drought conditions prevail, including higher water recovery scenarios throughout the Murray Darling Basin the scale

of horticultural land to be dried off will also increase. While 8% of irrigable land in the Mallee Region supports high value of vegetable crops including carrots, potatoes and asparagus it is anticipated that the market value and contractual arrangements will necessitate access to higher priced water allocations.

- While the market may be able to absorb short term drought conditions, the sheer scale of activity supporting higher value horticulture would be at risk during variable climate periods. A sustained period of dry could have significant detrimental impact on the Mallee Region given the concentration of investment associated with horticulture.

3.6 Priority 6: Economic outcomes for energy

Policy alignment: RET | CET | Finkel Review | Renewable Energy Action Plan | Community Energy

3.6.1 Summary

- Access to secure cost-effective energy aligned with Victoria's commitment to adopted renewable energy targets is central to prosperous regions, industries, cities and households.
- Volatility in market prices for electricity and gas have significant impact on regional businesses, particularly manufacturing.
- *Electricity prices (30%) & energy policy (29%)* were the top two greatest economic challenges for Australian business at the end of 2017.
- Victorian policy has begun to reposition renewable energy investment.
- The appetite for significant scale investment in renewable energy and exploration of waste to energy schemes is beyond the current level of government funding.
- Regional stakeholders have also cited difficulty in regulatory and policy environments (State to Federal) to bring projects to fruition.

3.6.2 Context

The region has a strong legacy of large scale renewable energy projects and supporting energy policy. Recent investment to value-add to existing solar generation through development of a \$25 million battery storage will provide 25 MW / 50 MWh battery integrated into the existing 60 MW Gannawarra Solar Farm. Further Large Scale power development opportunities have been approved and are fully supported throughout the Mallee Region (Figure 3-19)

Figure 3-19 Loddon Mallee Large Scale Solar Power Property Options

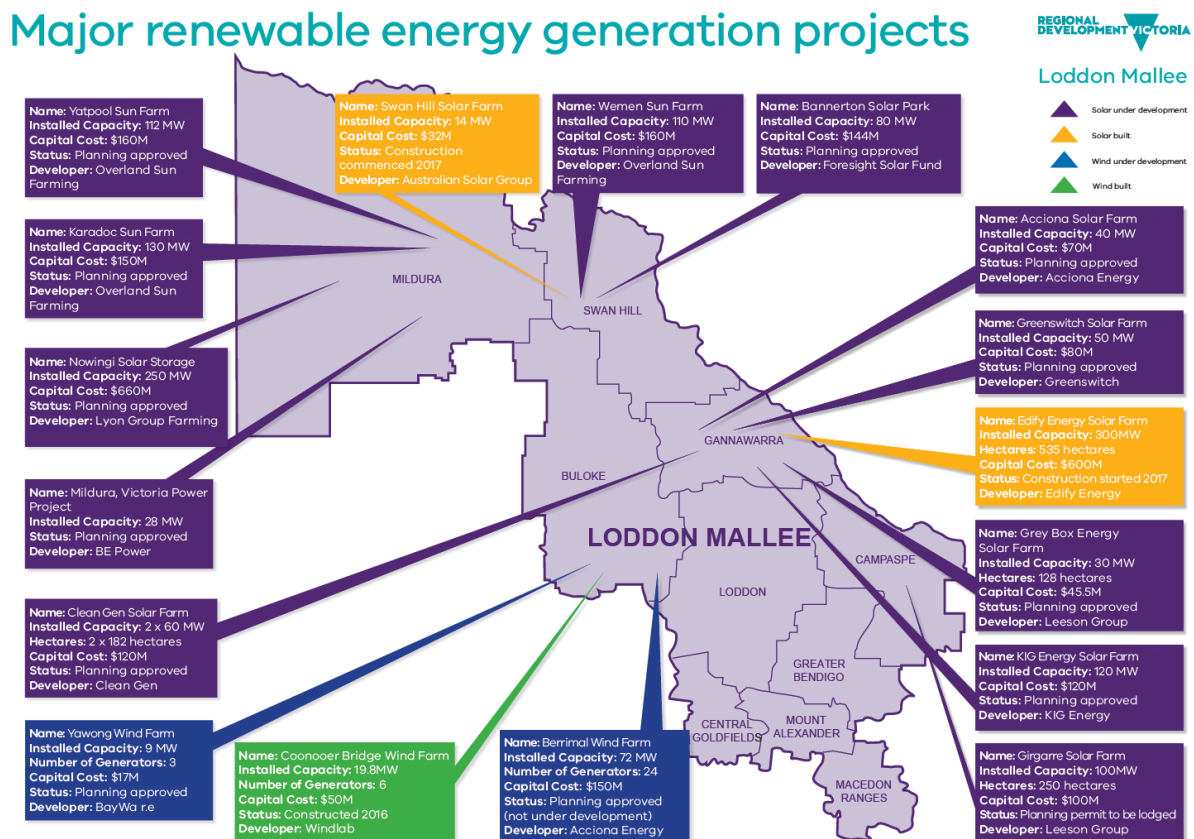
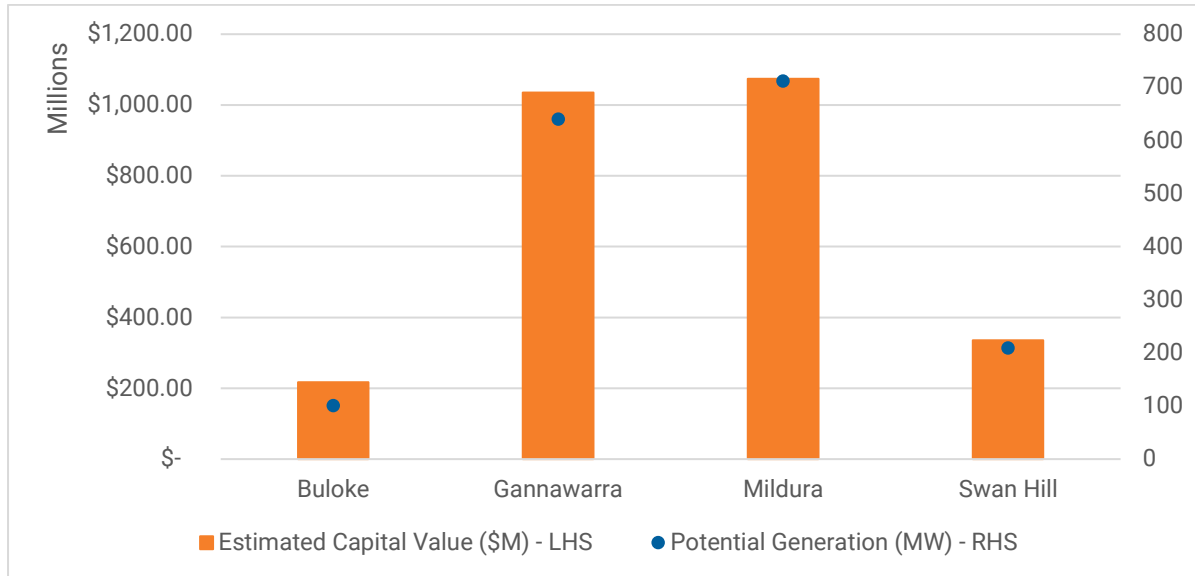


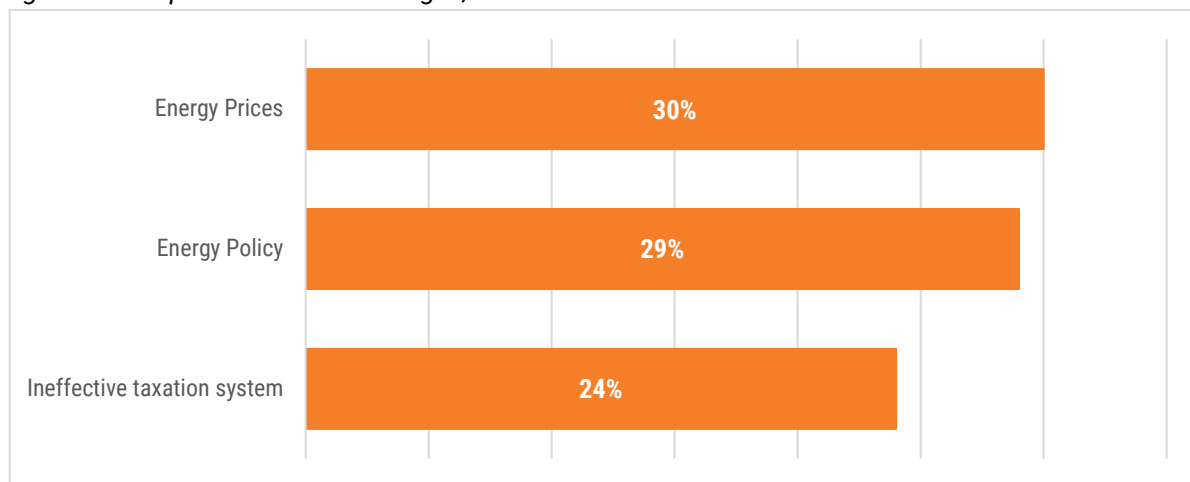
Figure 3-20 Mallee Region – Approved Large Scale Power Generation



Source: DEDJTR Loddon Mallee, March 2018.

However, the impacts of National renewable energy policy and global increase in gas pricing has driven many business owners and company Directors to highlight both Energy Pricing and Policy as the top two economic challenges behind an 'ineffective taxation system at the end of 2017 (Figure 3-21).

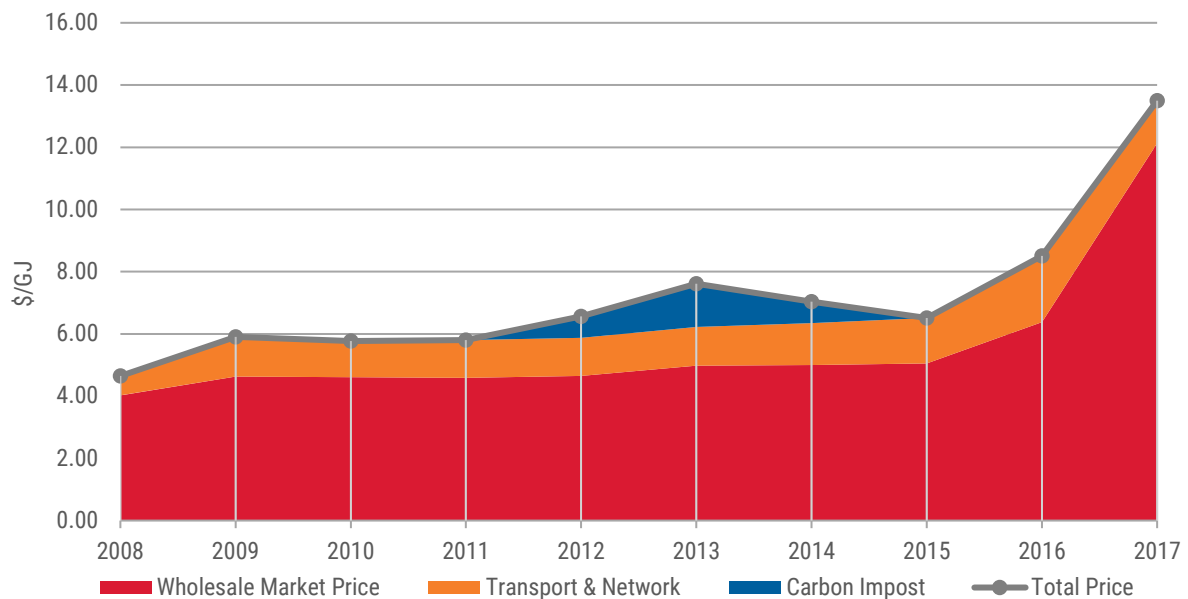
Figure 3-21 Top 3 Economic Challenges, Director Sentiment Index



Source: (2017) Australian Institute of Company Directors

The ramping up of gas pricing has had significant impacts for industrial businesses (Figure 3-22). Given the importance, and recent growth of the manufacturing sector within the region the significant changes in pricing particularly for gas delivered to country Victoria has created an appetite for significant scale investment in renewable energy and exploration of waste to energy schemes beyond the current level of government funding.

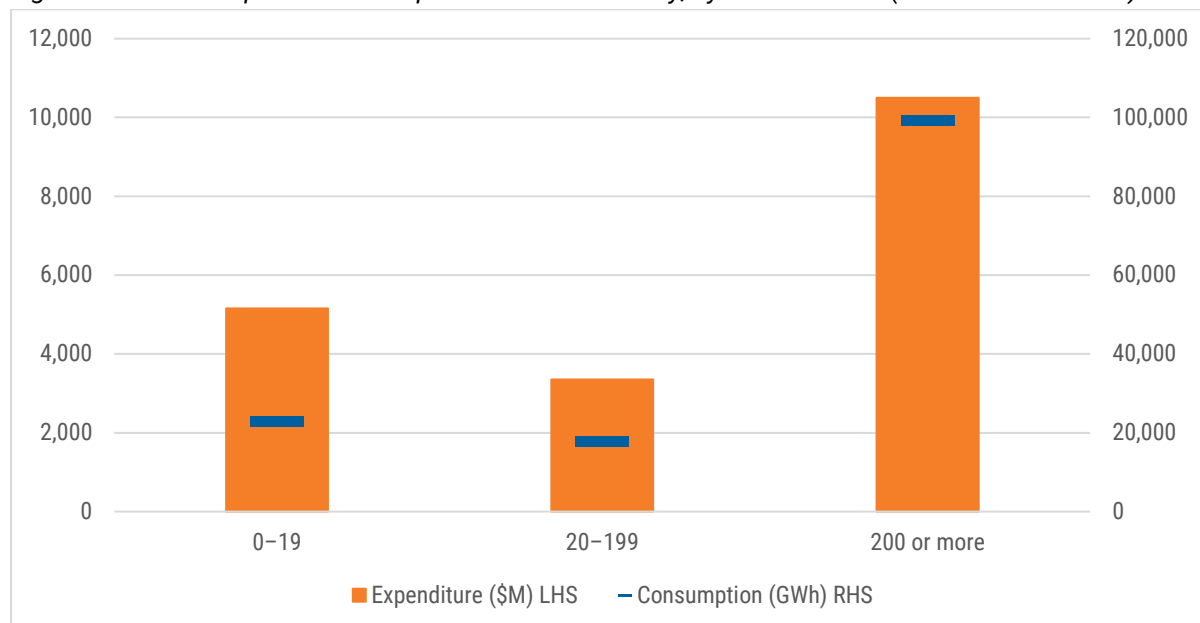
Figure 3-22 Small Industrial Customer (<1PJ pa) – Average Real (\$2017) Gas Price Delivered to country Victoria



Source: Oakley Greenwood (2018) Gas Price Trends Review 2017. COAG Energy Council

A review of electricity requirements by size of business (no. of employees) reveals that small medium enterprises in Australia (under 199 employees) typically consume 19,000 and 23,000 GWh per annum. Large enterprises (over 200 employees) have a much higher consumption demand closer to 100,000 GWh per annum. Business expenditure is significant at a national level, following demand and estimated to be over \$19.000 billion per annum across Australia.

Figure 3-23 Consumption of and expenditure on electricity, by business size (Australia 2014 – 15)



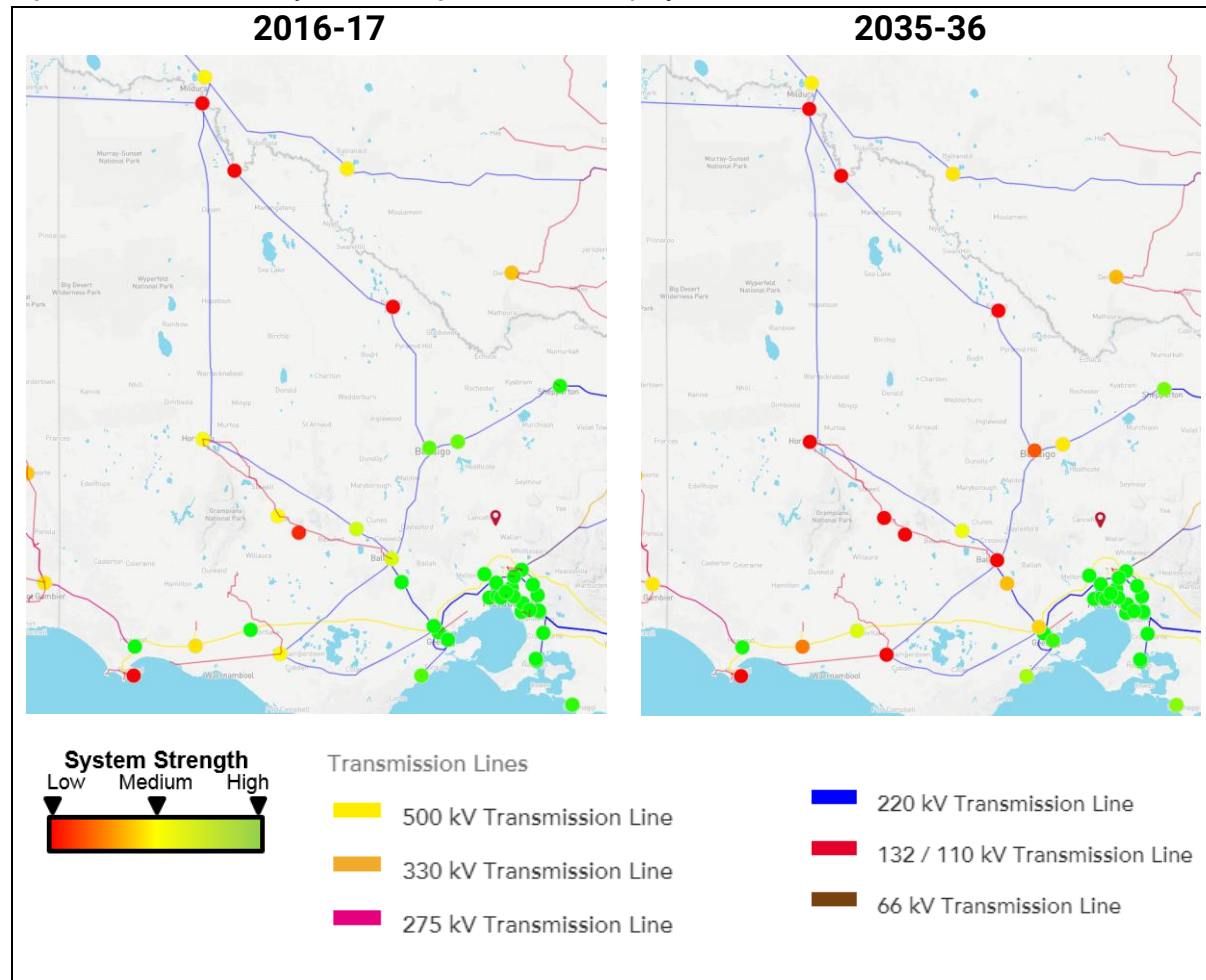
Source: ABS (2016) 4660.0 Energy Use, Electricity Generation and Environmental Management, Australia, 2014-15.

It is clear that the demand for increased energy generation diversity feeding into the national grid is required. However the need to ensure increased levels of system strength within the grid is at the core of local renewable energy investment. Current and projected System Strength indicates the capacity

of the local power system to respond to disturbances in the system and maintain stability. Low system strength generally leads to increased volatility of network voltages during system normal and disturbance conditions. Synchronous Generation includes Coal, gas and hydro. While . Power Electronic Converter (PEC) Generation include Large-scale wind and solar⁷. Figure 3-24 demonstrates the current limitations of the Generation systems located in northwest Victoria.

The fundamental limitations in the generation system associated with Northern Victoria currently constrain the continued investment in large scale renewable energy supply.

Figure 3-24 Generation System Strength 2016-17 and projected 2035-36

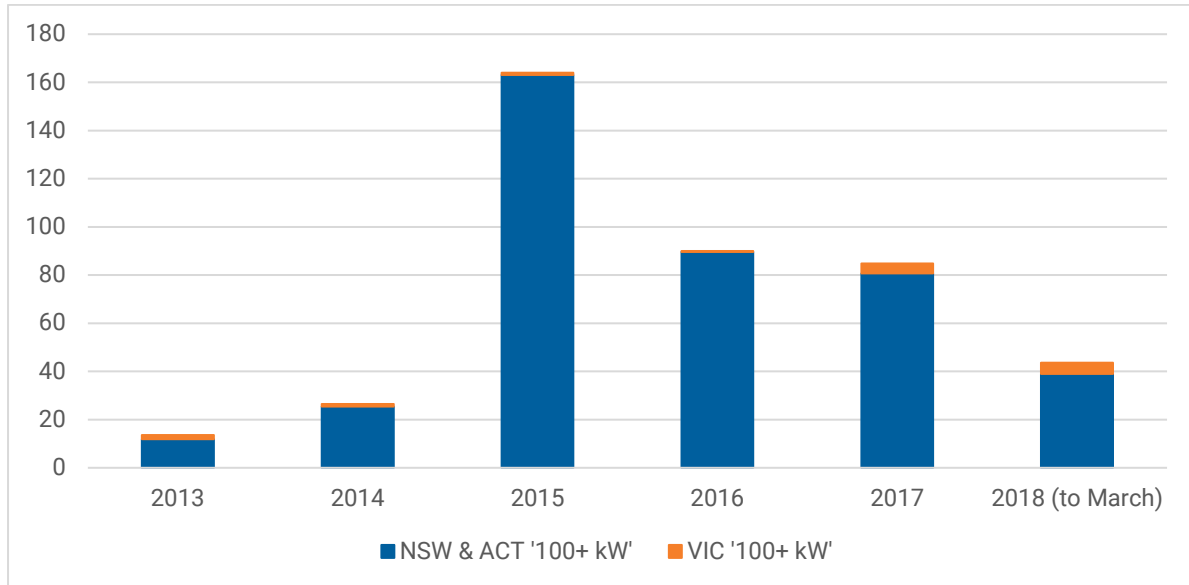


Source: AEMO (online) Interactive Maps And Dashboards: <http://www.aemo.com.au/aemo/apps/visualisations/map.html>

Despite recent State policy efforts to address the mix of power within the region, Victoria is largely behind its most comparable State counterpart New South Wales (including the ACT) in production of large scale systems of 100+ KW (Figure 3-25).

⁷ Fact Sheet: System Strength https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Reports/2016/AEMO-Fact-Sheet-System-Strength-Final-20.pdf

Figure 3-25 Victorian and New South Wales (incl. ACT) photovoltaic installations over 100 kW



Source: Australian PV Institute, sourced from Clean Energy Regulator.

The recent international investment intervention in South Australia has proven there are modes of delivery to disrupt national energy markets. Within the Mallee Region there existing opportunities that require policy and technical solutions to unlock significant large scale solar solutions.

3.6.3 Opportunities

Advocacy & engagement

- Develop an advocacy and engagement strategy to address regulatory barriers and identified grid constraints within the system. Support Local Government in development of local capability to drive advocacy and facilitate local development outcomes.
- International investment has proven to expedite innovative solutions in other State jurisdictions. Develop advocacy and engagement strategy to address regulatory barriers. Energy and waste projects have been identified in the region and some are awaiting site approval or finance. Advocacy and engagement to unlock these opportunities.

Explore innovative financing

- Sustainability Victoria has created an innovative financing solution for energy efficiency through the Environmental Upgrade Finance mechanism. As a region, Mallee could explore and look to capitalise on innovative regional financing models through lens of regional development. This has been successfully applied for Bendigo Community Bank Model and could unlock feasible business solutions to waste and energy requirements at a regional scale.

3.7 Priority 7: Renewed regional tourism product

Policy alignment: *Creative Industries Strategy | Future Industries | International Education Sector Strategy | Visitor Economy Strategy*

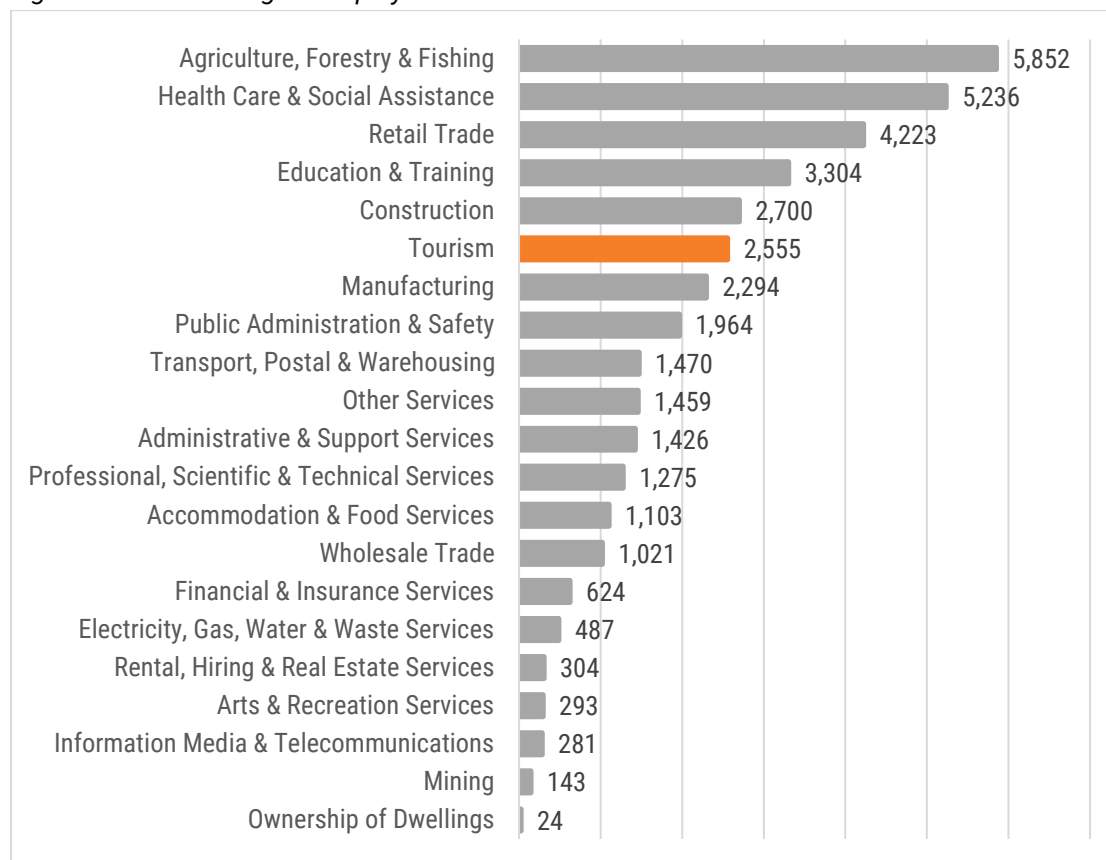
3.7.1 Summary

- Opportunity exists to increase visitor numbers to the region by investing in the region and promoting regional products.
- Traditional focus on 'caravan – families' is a low yield market.
- International visitation to regional Victoria increased by 9.8% in 2017.
- However, International overnight expenditure in the Murray tourism region experienced a decrease of 42.1% down to \$54 million.
- Increased tourism spend within the region will lead to an increase in local jobs
- Sport, art and cultural events promote high levels of tourism engagement.
- Engagement internationally has been recognised to create economic benefit through: access to talent, leveraging significant tourism outcomes; expanding export of goods & services.

3.7.2 Context

The tourism sector contributes 2,701 jobs (7.1%) to total employment and \$474.364 million in total output. Domestic day visitors to the Mallee region spend on average \$169 per day, while domestic overnight visitors typically stay an average of 3 nights and spent \$416 per trip.

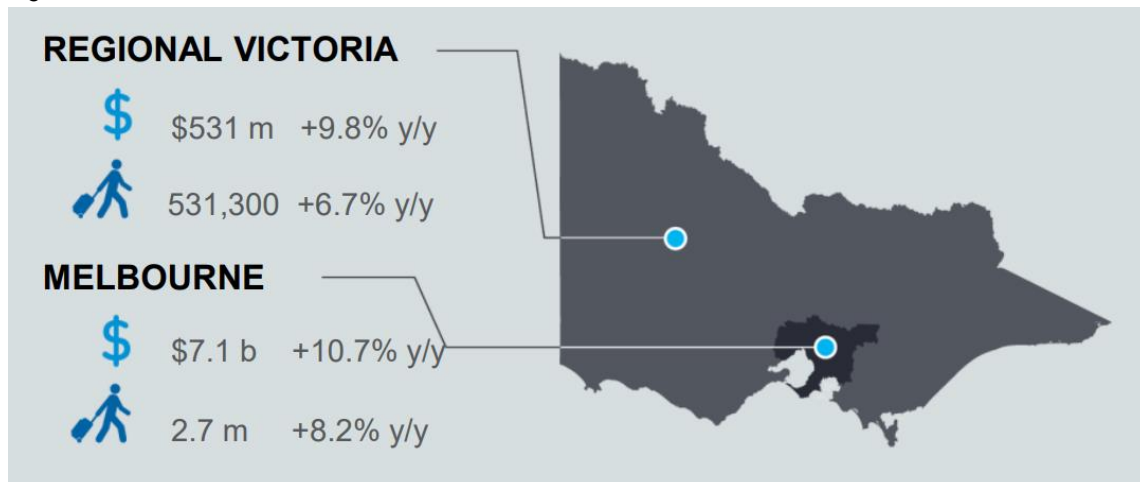
Figure 3-17 Mallee Region Employment



Source: REMPLAN Tourism Analysis

Opportunity exists to increase visitors to the region by promoting local sites such as the Murray Adventure Trail, Murray River, Ancient Plains, Lake Tyrell and townships of note such as Mildura.

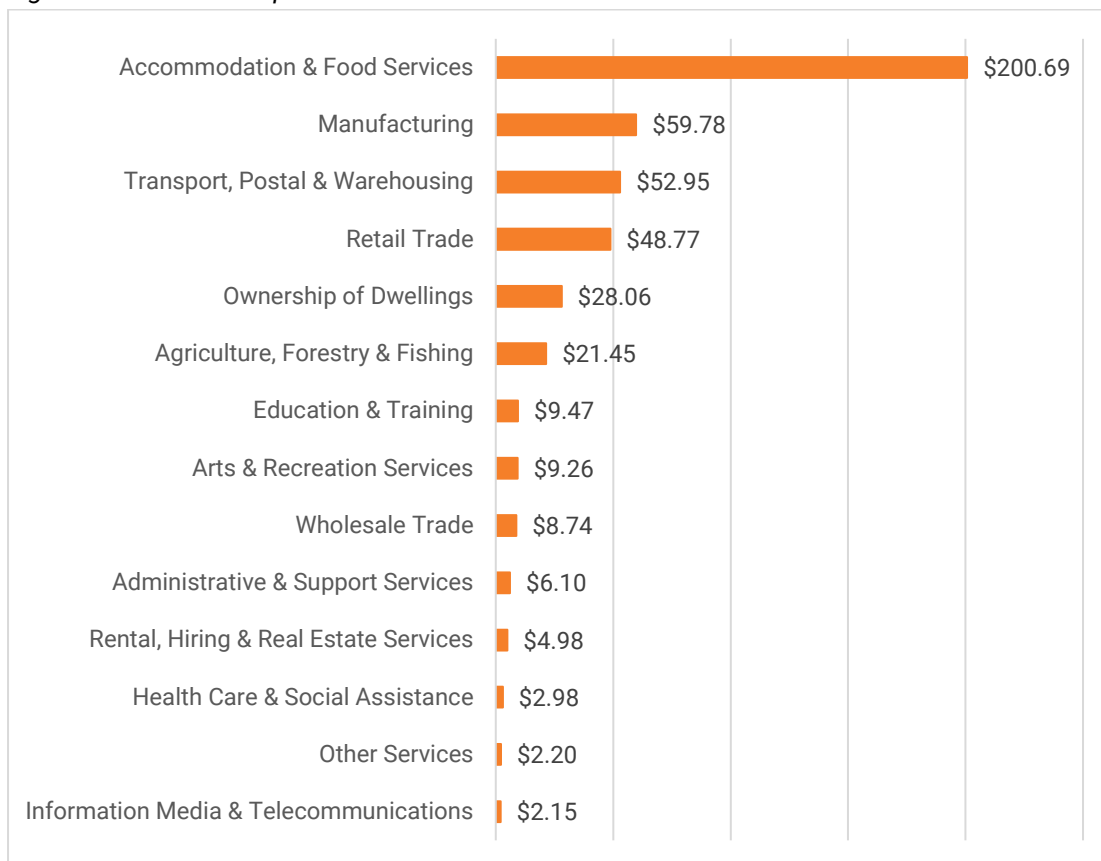
Figure 3-26 Victorian International Tourism Performance



Source: Victorian Government (2016) International Visitor Survey Results (year ending December 2017). DEDJTR.

Tourism output represents the gross revenue generated by businesses / organisations in the Tourism sector. Tourism is an amalgamation of a number of industry sectors. The output attributed by tourism in the Mallee region is estimated at \$457.578 million. 'Accommodation and Food Services' accounts for \$200.687 million (or 43.9% of total output) followed by 'Manufacturing' (\$59.775 million) and 'Transport, Postal and Warehousing' (\$52.953 million).

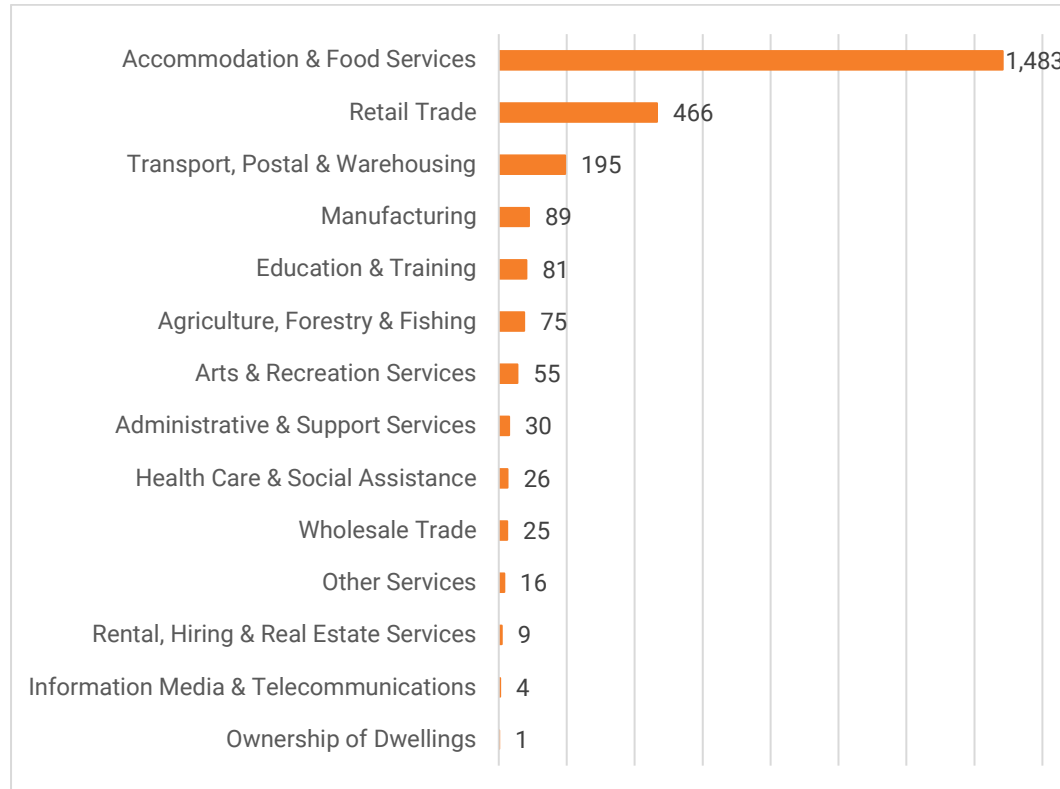
Figure 3-27 Mallee - output attributed to tourism



3.7.3 Tourism Employment

The total employment (place of work) estimate for Tourism within the Mallee as at the 2016 Census is 2,555 jobs. The 'Accommodation and Food Services' industry sector is the largest sector at 1,483 jobs (58.0%); followed by 'Retail Trade' (466 jobs) and 'Transport, Postal and Warehousing' (195 jobs).

Figure 3-28 Mallee – employment attributed to tourism



3.7.4 Visitor profile

Tourism Research Australia (TRA) data for Mallee region provides estimates for typical visitor expenditure for domestic day and domestic overnight visitors.

Figure 7-3 Mallee Visitor Profile

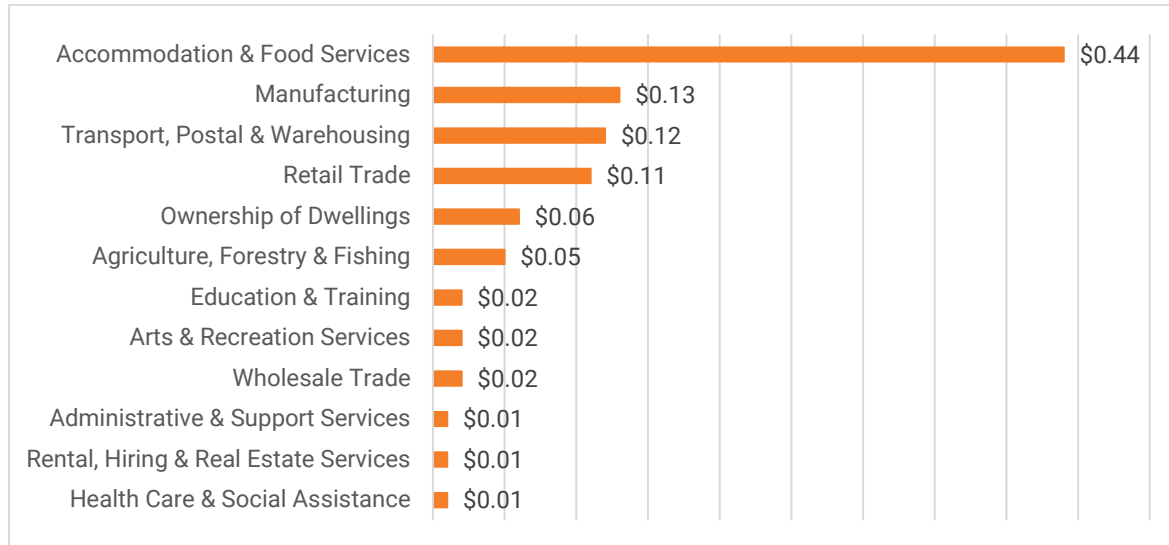
	Average stay (nights)	Average spend per trip (\$)	Average spend per night (\$)
Domestic Day	-	\$169	-
Domestic Overnight	3	\$416	\$144
International	33	\$1,266	\$38

Source: Tourism Research Australia (TRA), Tourism in Local Government Areas 2015; Domestic Day visitors & International visitors: Mallee. Domestic Overnight visitors - Mallee & Wimmera - weighted averages.

3.7.5 Distribution of Tourist Dollar

For each dollar spent by a visitor in Mallee, it is estimated that typically \$0.44 is spent on Accommodation and Food Services, \$0.13 on Manufacturing and \$0.12 on Transport, Postal and Warehousing. The estimated typical distribution of a dollar spent in the Mallee region is shown in the graph below.

Figure 7-4 Distribution of a Typical Visitor Dollar – Mallee Region



3.7.6 Opportunities

Co-ordinated Regional Tourism Strategy

- Develop a Mallee Regional tourism strategy with a focus on 'regional' tourism products.
- Target opportunities that build on economic capability with an emphasis on 2-way trade, direct foreign investment, attracting visitors and retaining talent/skills in the region and shift focus toward higher value tourism markets.
- Reconsider the regional tourism product from Sea Lake to Murray River and Mildura – that packages existing strong regional destination assets including: Murray Adventure Trail, Murray River, Lake Tyrell, Mildura, Koondrook/Barham.

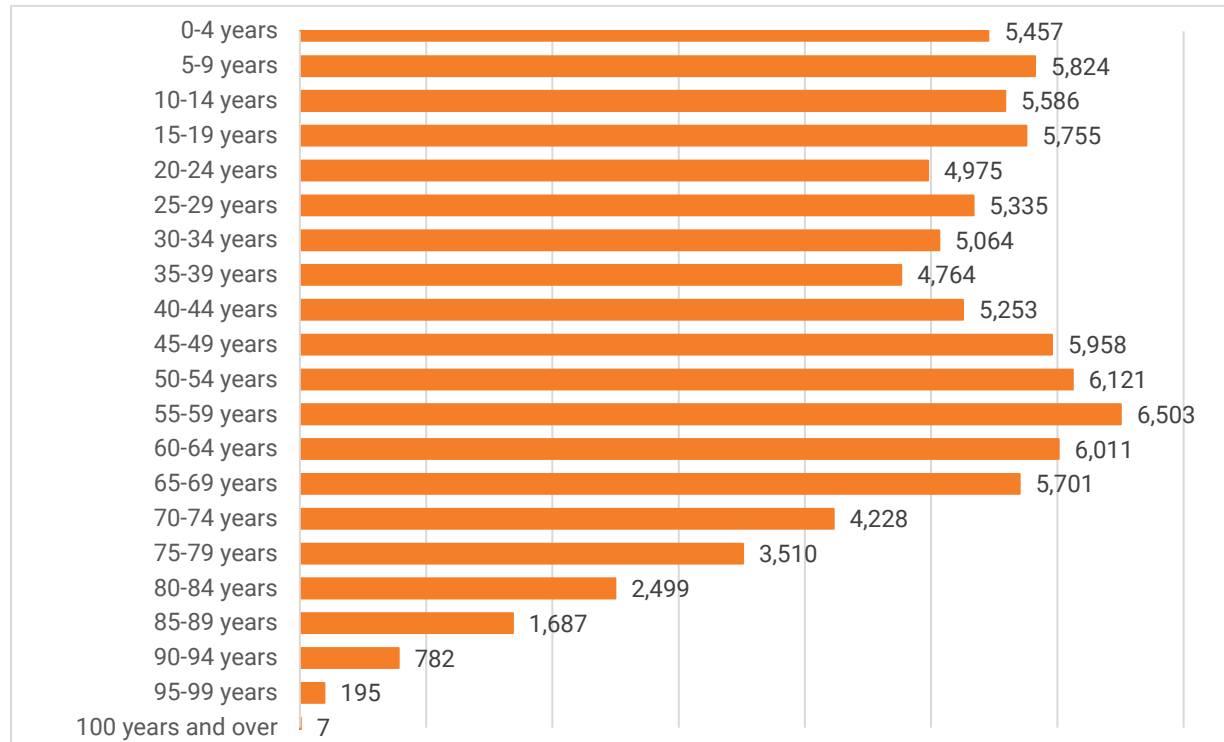
4 Appendices

1 Demographics

1.1 Mallee Population

The total number of people usually resident in the Mallee region in all age cohorts in 2016 was 91,215. The 55-59 year cohort accounts for the largest proportion of residents being 6,503 residents.

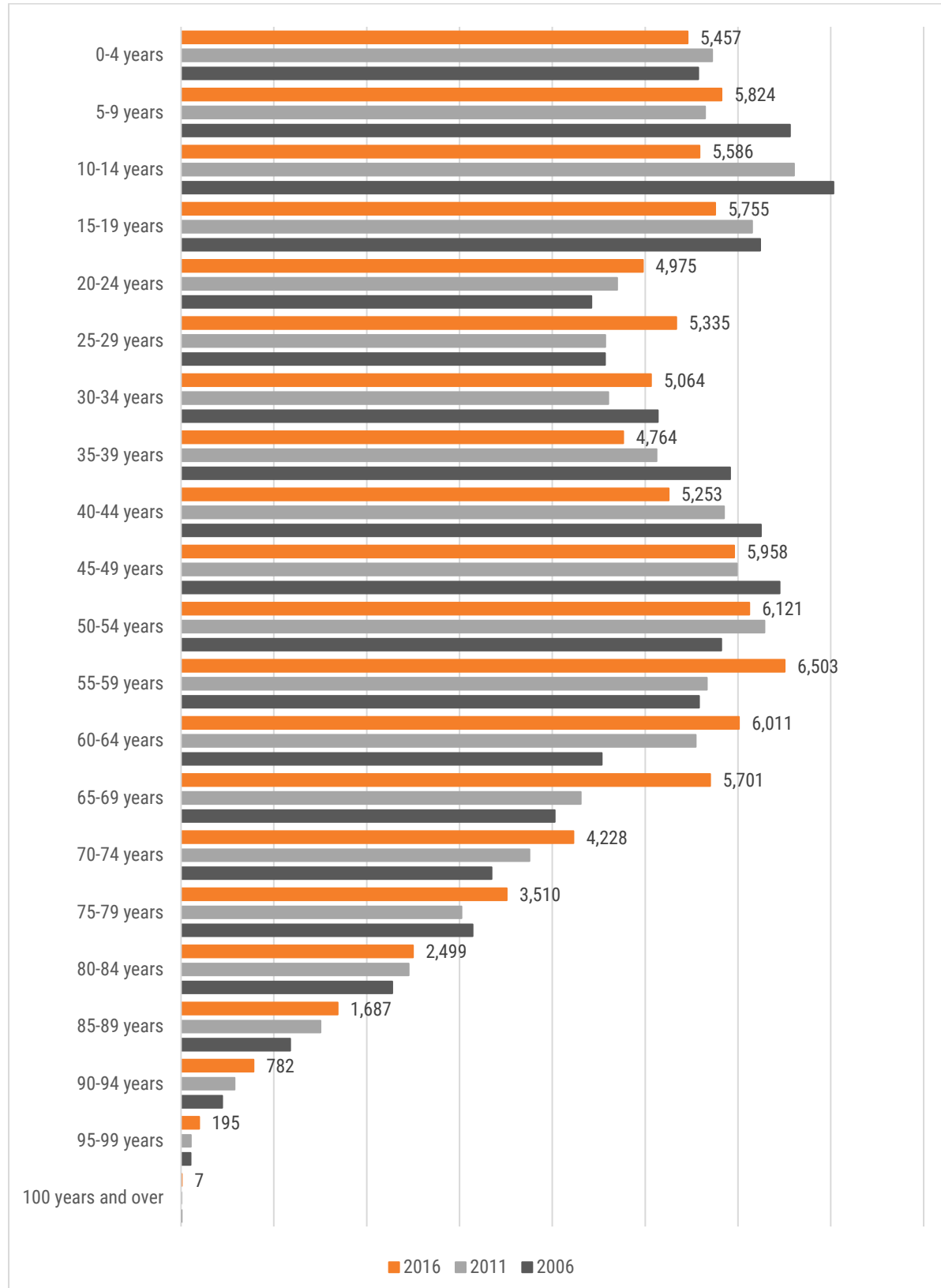
Figure 1-1 Mallee Population 2016



1.2 Mallee Population 2016, 2011 and 2006

The total number of people usually resident in the Mallee region in all age cohorts in 2006 was 88,590 in 88,177 in 2011. Over the period from 2006 to 2016 there was an increase in the population by 0.32%.

Figure 1-2 Mallee Population – 2016, 2011 and 2006

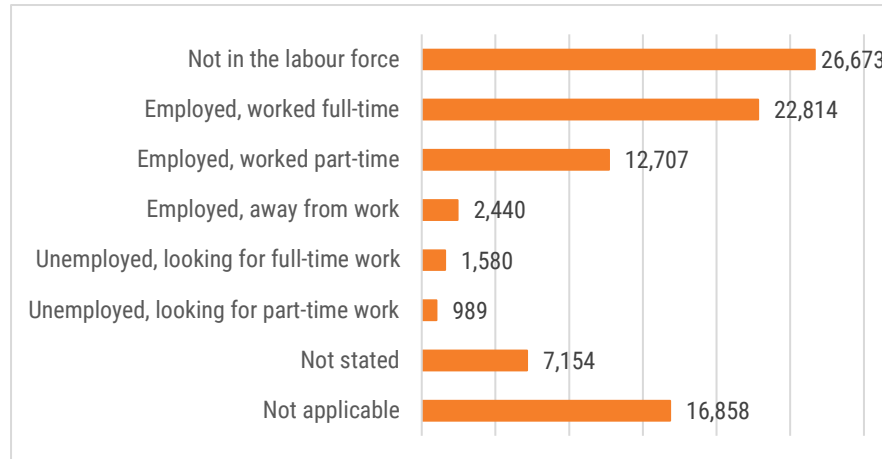


2 Workforce

2.1 Mallee - labour force participation

Of the 91,215 residents living within the Mallee region, there were 37,961 (41.61%) residents working either full time or part time (including those employed but away from work). 2,569 (2.81%) of residents were unemployed and looking for full time or part time work.

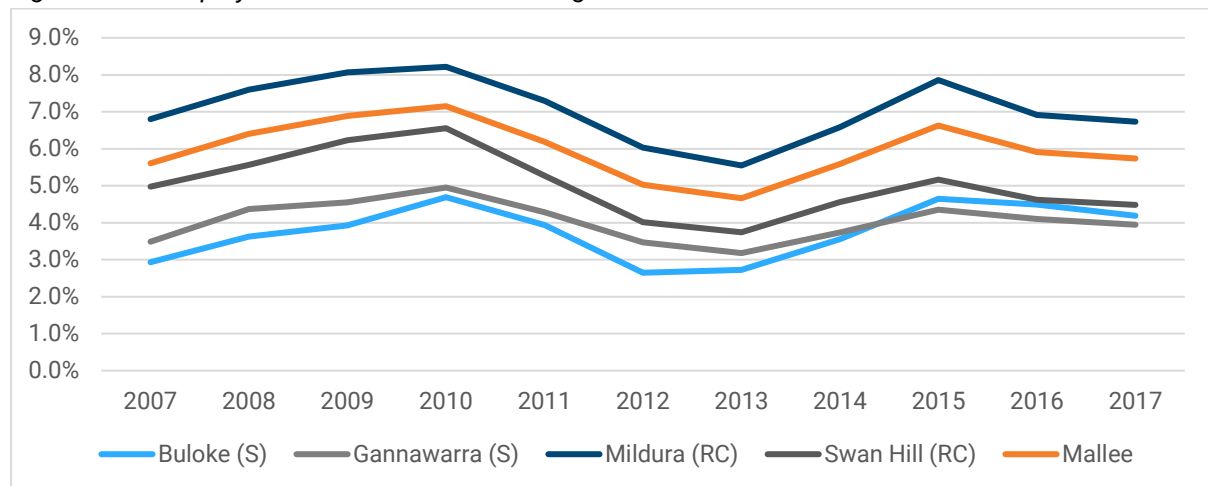
Figure 2-1 Mallee - labour force participation



2.2 Mallee – unemployment rate

Across the Mallee region the average unemployment rate for the region has sat between 4.7% and 7.2% for the 10 year period between 2007 and 2017.

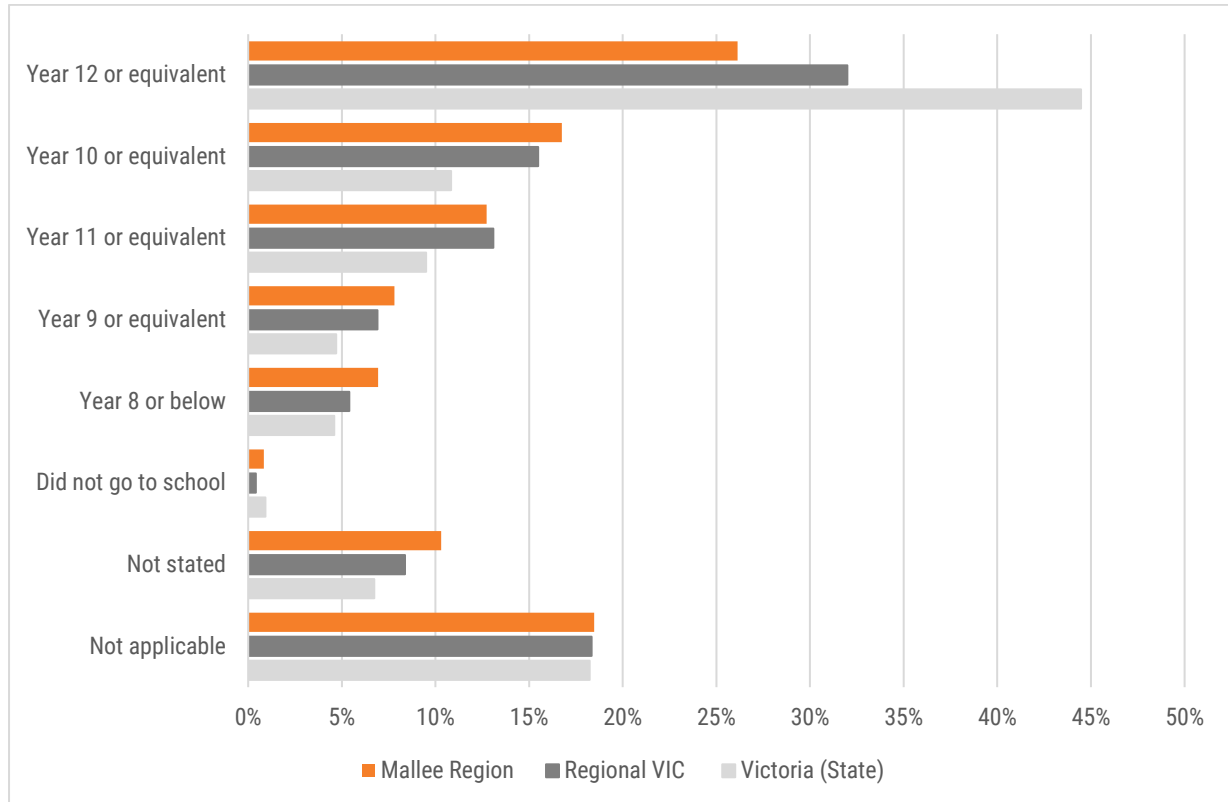
Figure 2-2 Unemployment Rate across Mallee Region Local Government Areas



2.3 Mallee – education attainment

There has been an increase in the educational attainment of people in the Mallee region. 26.13% of residents had completed year 12 in 2016, compared with 23.31% in 2011 and 20.35% in 2006.

Figure 2-3 Mallee Region | Regional VIC | Victoria (State) – school completion (2016)



There has been a general increase in the educational qualifications of people in the Mallee region. In 2016, 7,210 (7.90%) residents had completed at least a Bachelor level qualification (including Postgraduate and Graduate Diploma level), compared with 6.97% in 2011 and 5.99% in 2006.

Table 2-1 Highest Year of School Completion (2016)

Highest Year Of School Completed	Mallee Region		Regional VIC		Victoria (State)	
	Persons	%	Persons	%	Persons	%
Year 12 or equivalent	23,832	26.13%	482,905	32.00%	2,636,074	44.48%
Year 10 or equivalent	15,282	16.75%	233,742	15.49%	641,674	10.83%
Year 11 or equivalent	11,617	12.74%	197,477	13.08%	563,210	9.50%
Year 9 or equivalent	7,130	7.82%	104,090	6.90%	278,954	4.71%
Year 8 or below	6,334	6.94%	81,593	5.41%	272,515	4.60%
Did not go to school	760	0.83%	6,167	0.41%	54,669	0.92%
Not stated	9,404	10.31%	126,472	8.38%	398,609	6.73%
Not applicable	16,856	18.48%	276,799	18.34%	1,080,919	18.24%
Total	91,215	100.00%	1,509,245	100.00%	5,926,624	100.00%

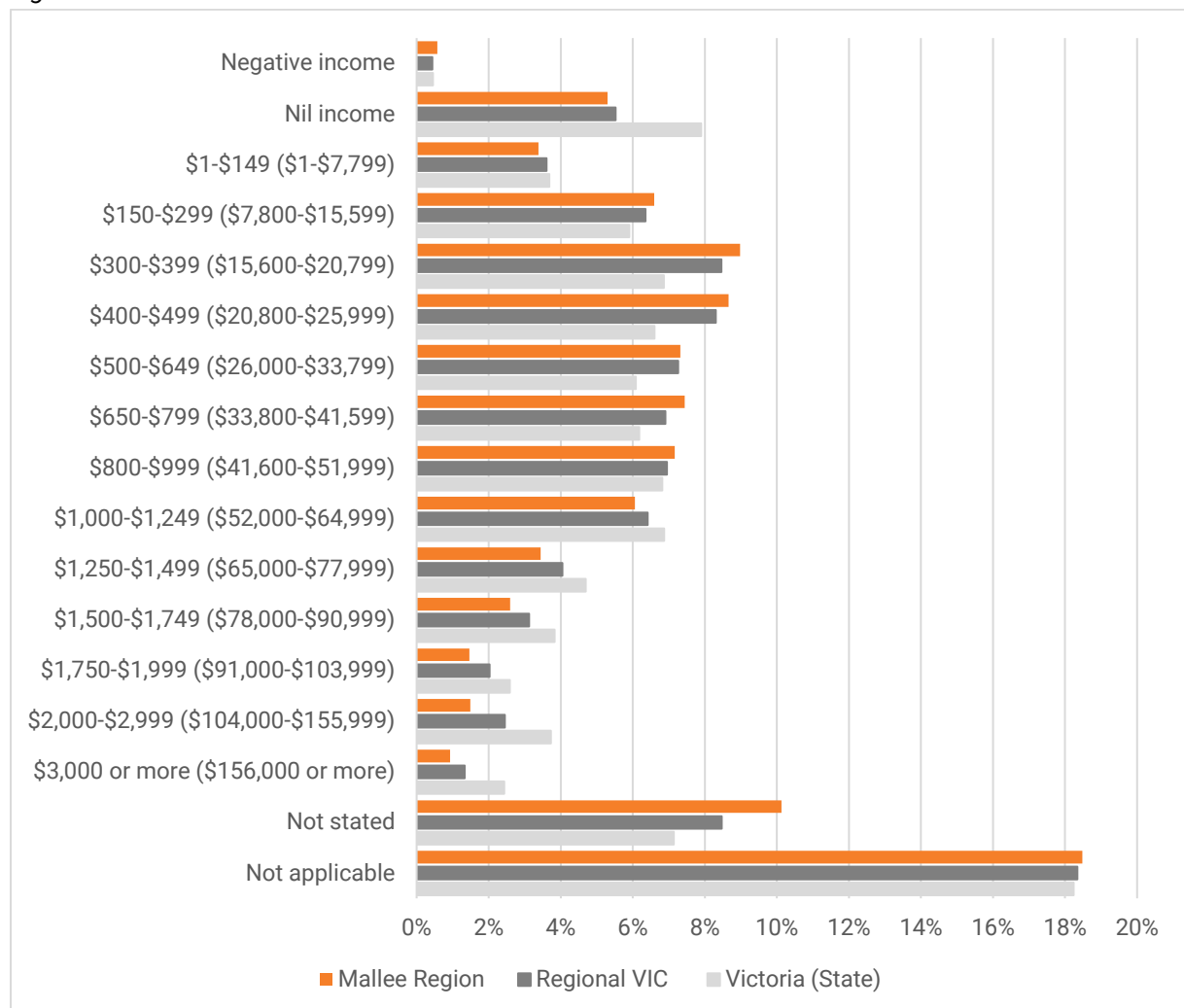
Table 2-2 Mallee – qualifications

Level	Mallee Region		Regional VIC		Victoria (State)	
	Persons	%	Persons	%	Persons	%
Certificate Level	15,218	16.68%	272,872	18.08%	818,449	13.81%
Bachelor Degree Level	5,519	6.05%	126,136	8.36%	798,271	13.47%
Advanced Diploma and Diploma Level	5,083	5.57%	105,379	6.98%	447,024	7.54%
Graduate Diploma and Graduate Certificate Level	990	1.09%	25,928	1.72%	119,225	2.01%
Postgraduate Degree Level	701	0.77%	27,175	1.80%	260,040	4.39%
Inadequately described	376	0.41%	7,532	0.50%	36,800	0.62%
Level of education not stated	10,456	11.46%	141,865	9.40%	446,244	7.53%
Not applicable	52,872	57.96%	802,358	53.16%	3,000,571	50.63%
Total	91,215	100.00%	1,509,245	100.00%	5,926,624	100.00%

2.4 Mallee – social and economic disadvantage

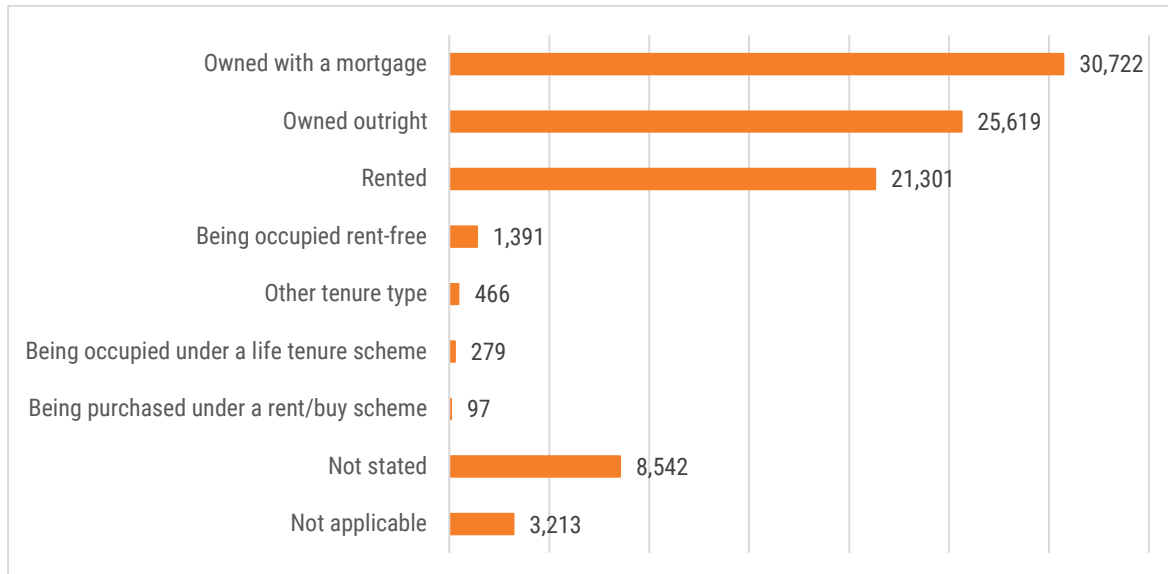
In 2016, of the 91,630 respondents in Mallee, 8,066 had a weekly household income between \$300-\$399. 49,948 respondents (54.51%) had a weekly household income of less than \$999. 35.99% (32,980) of all households in Mallee have 2 motor vehicles, where 21.51% (19,708) have 1 vehicle. Of all respondents, 5,877 (6.41%) had a need for assistance with core activities.

Figure 2-4 Mallee – household income



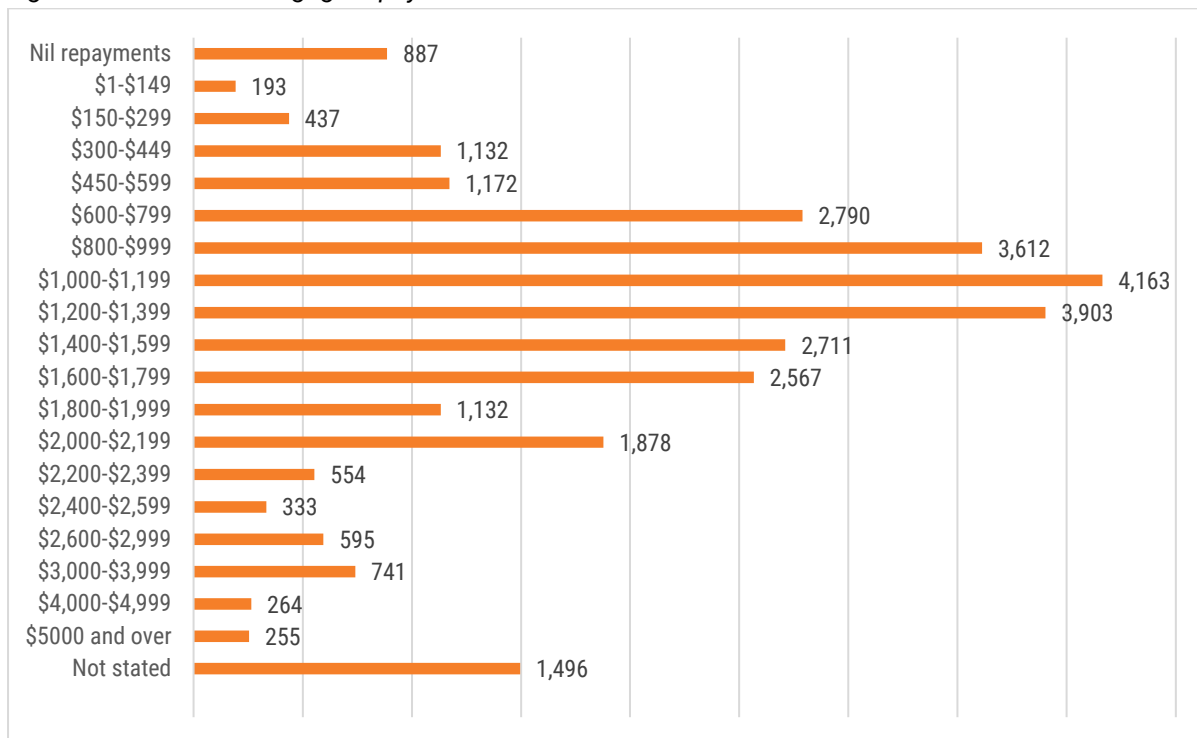
In 2016, 88,417 residents in Mallee occupied private dwellings of which 56,341 (61.49%) were owned with a mortgage or owned outright. Within the region, 44.97% of homes were 3 bedrooms, 25.22% were 4 bedrooms and 10.39% were two bedrooms.

Figure 2-5 Mallee – household ownership



Of those paying a mortgage, the largest proportion of residents 4,163 (4.54%) paid in the \$1,000-1,199 mortgage cohort. 3,903 residents paid in the \$1,200-\$1,399 cohort, where 3,612 paid between \$800-\$999. In the region, 21,301 were occupying rental homes. Of those paying rent, the largest proportion of residents 2,837 (3.10%) paid in the \$200-224 rent cohort.

Figure 2-6 Mallee – mortgage repayment⁸



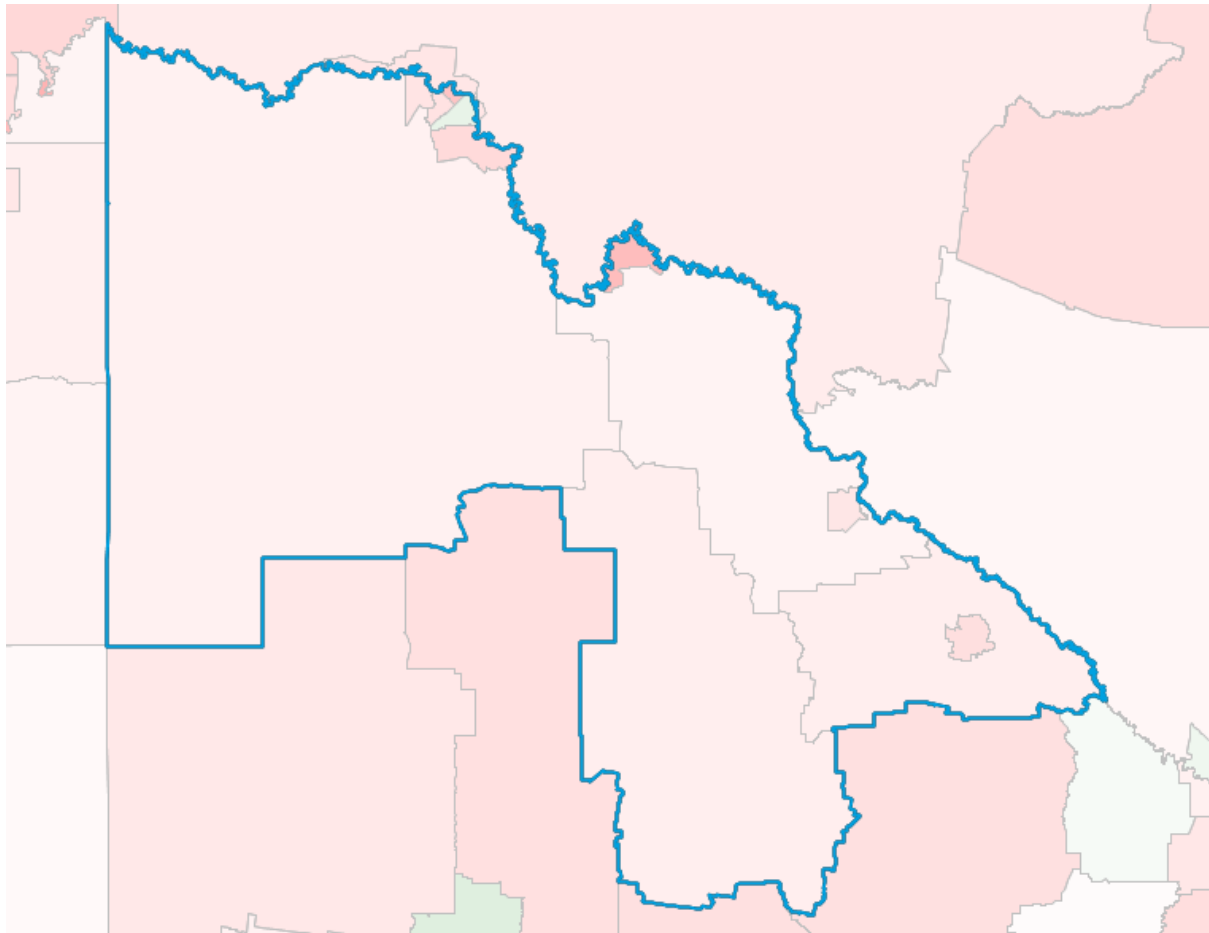
⁸ Graph omits those residents who are not paying mortgage repayments

Socio Economic Indexes for Areas (SEIFA) is a suite of indexes that have been created by the Australian Bureau of Statistics (ABS) from social and economic Census information. Each index ranks geographic areas across Australia in terms of their relative socio-economic advantage and disadvantage. The SEIFA score for the **Mallee** Region in 2016 was 942.

Table 2-3 SEIFA Disadvantage – SA2 Regions

Region	Score	National Rank
Irymple	1,018	1,190 / 2,184
Swan Hill Region	978	751 / 2,184
Mildura Region	973	694 / 2,184
Gannawarra	968	658 / 2,184
Buloke	967	648 / 2,184
Swan Hill	952	521 / 2,184
Merbein	948	489 / 2,184
Mildura - South	945	471 / 2,184
Kerang	938	414 / 2,184
Red Cliffs	928	340 / 2,184
Mildura - North	886	162 / 2,184
Robinvale	871	125 / 2,184

Figure 2-7 Mallee SA2's – SEIFA

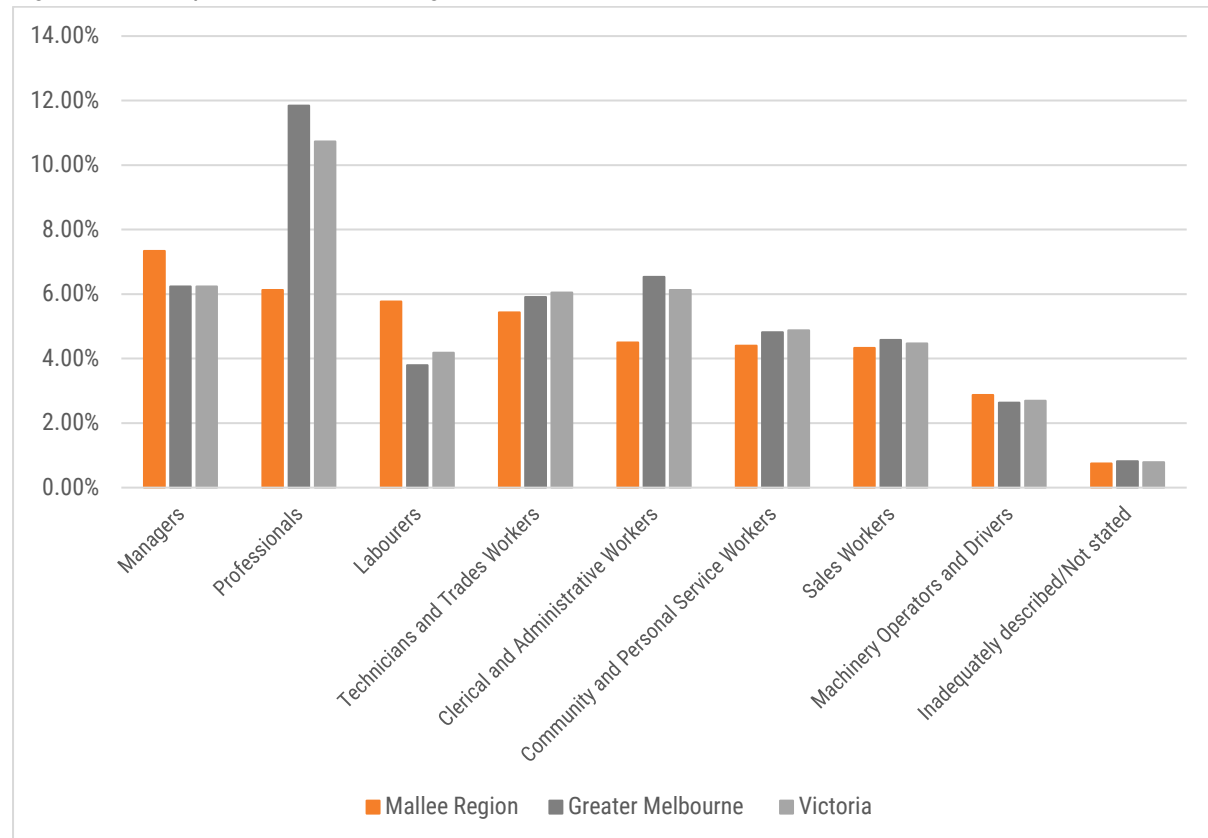


Source: ABS 2018

2.5 Mallee – occupation

Workers across the Mallee region are classified into a number of occupations. Managers makes up the largest cohort of occupations within the region at 7.34% or 6,699 workers. When compared to the state, the largest cohort is the Professionals occupation with 10.73% of all workers across the state classified within this occupation.

Figure 2-8 Occupations in Mallee Region.



2.6 Mallee – journey to work

Figure 2-9 Residence of worker, work in region

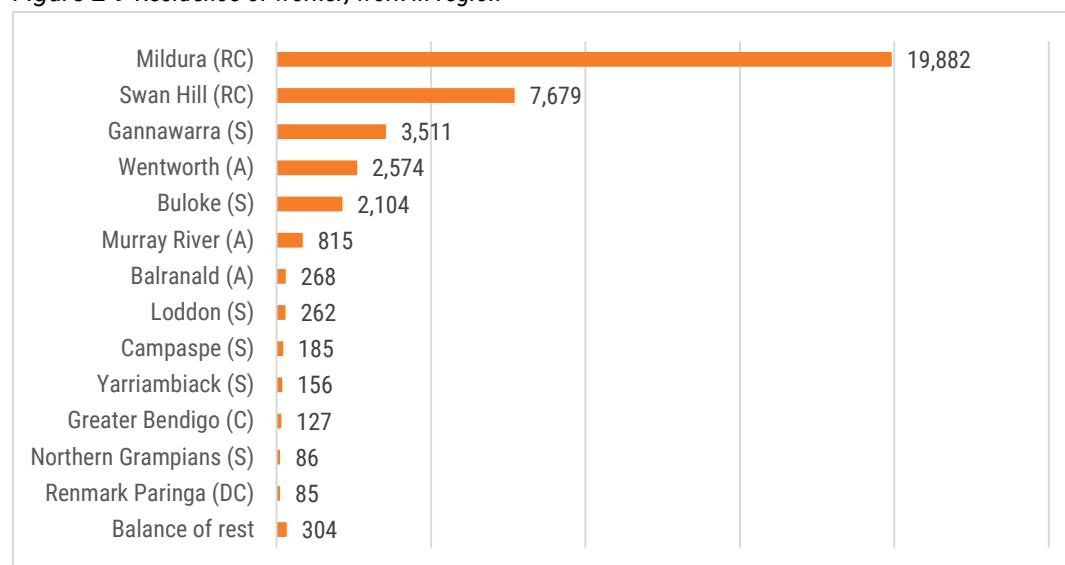
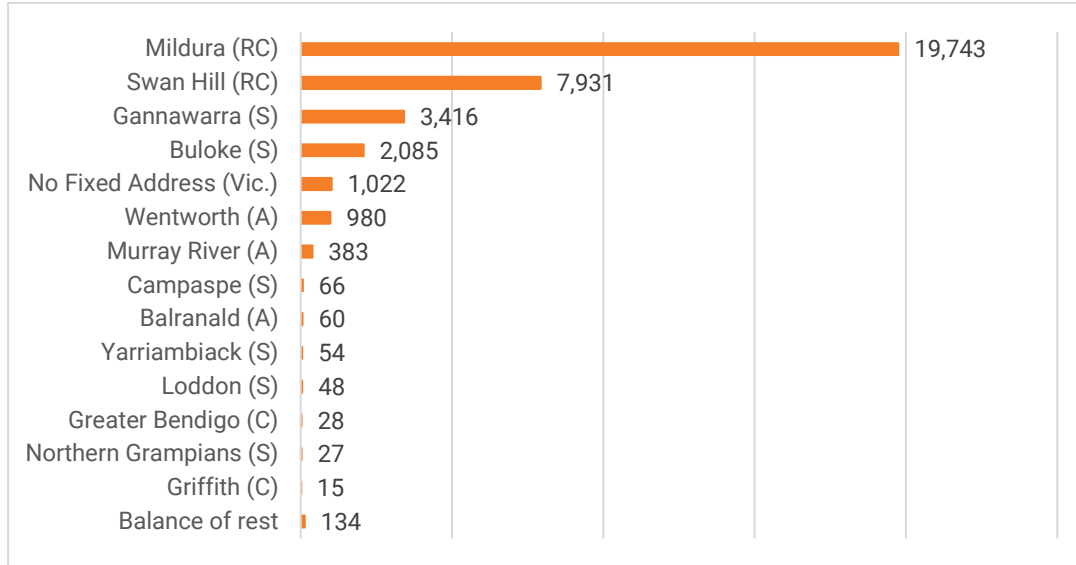


Figure 2-10 LGA of usual work



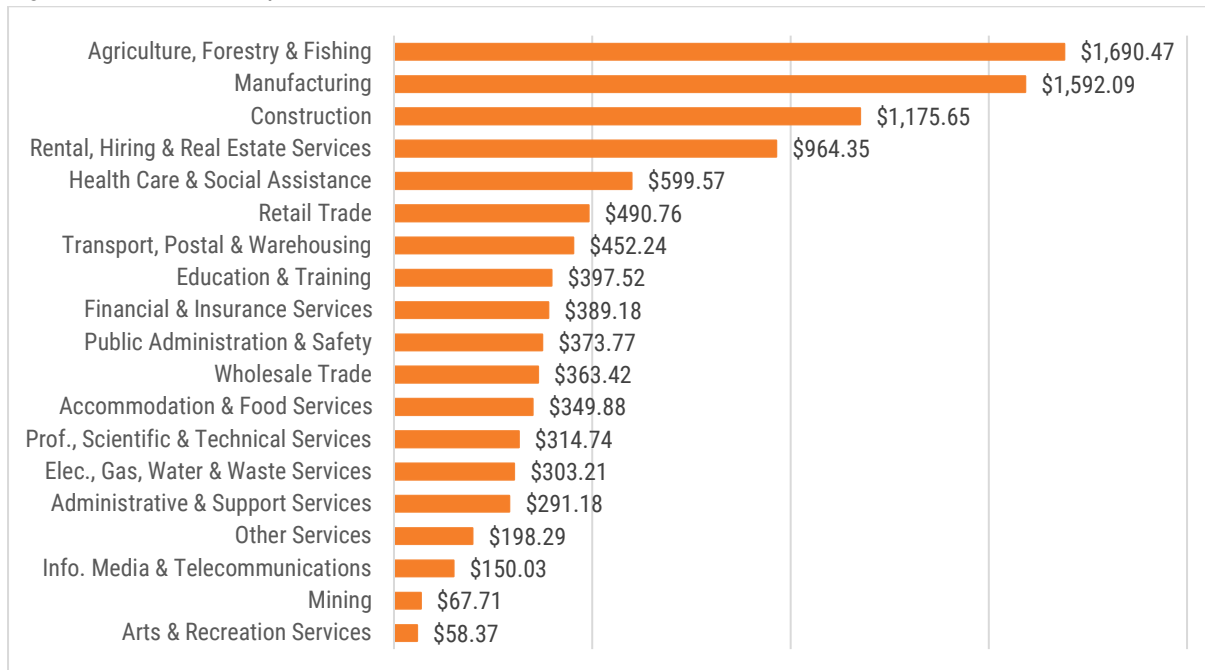
2.7 Economic Indicators

2.7.1 Output

Output data represents the gross revenue generated by businesses / organisations in each of the industry sectors in a defined region.

The output generated by Mallee region is estimated at \$10,222.444 million. 'Agriculture, Forestry and Fishing' accounts for \$1,690.473 million (or 16.8% of total output) followed by 'Manufacturing' (\$1,592.091 million) and 'Construction' (\$1,175.651 million).

Figure 2-11 Mallee Output



2.7.2 Wages and Salaries

This report shows the wages and salaries paid to employees who work in Mallee. The total wages and salaries estimate for the precinct is \$2,385.995 million. The 'Health Care and Social Assistance' sector generates \$371.703 million in wages and salaries for the employed persons working in the Mallee region. The figure also compares Regional Victorian and Victoria (State)

Figure 2-12 Mallee Wages and Salaries -

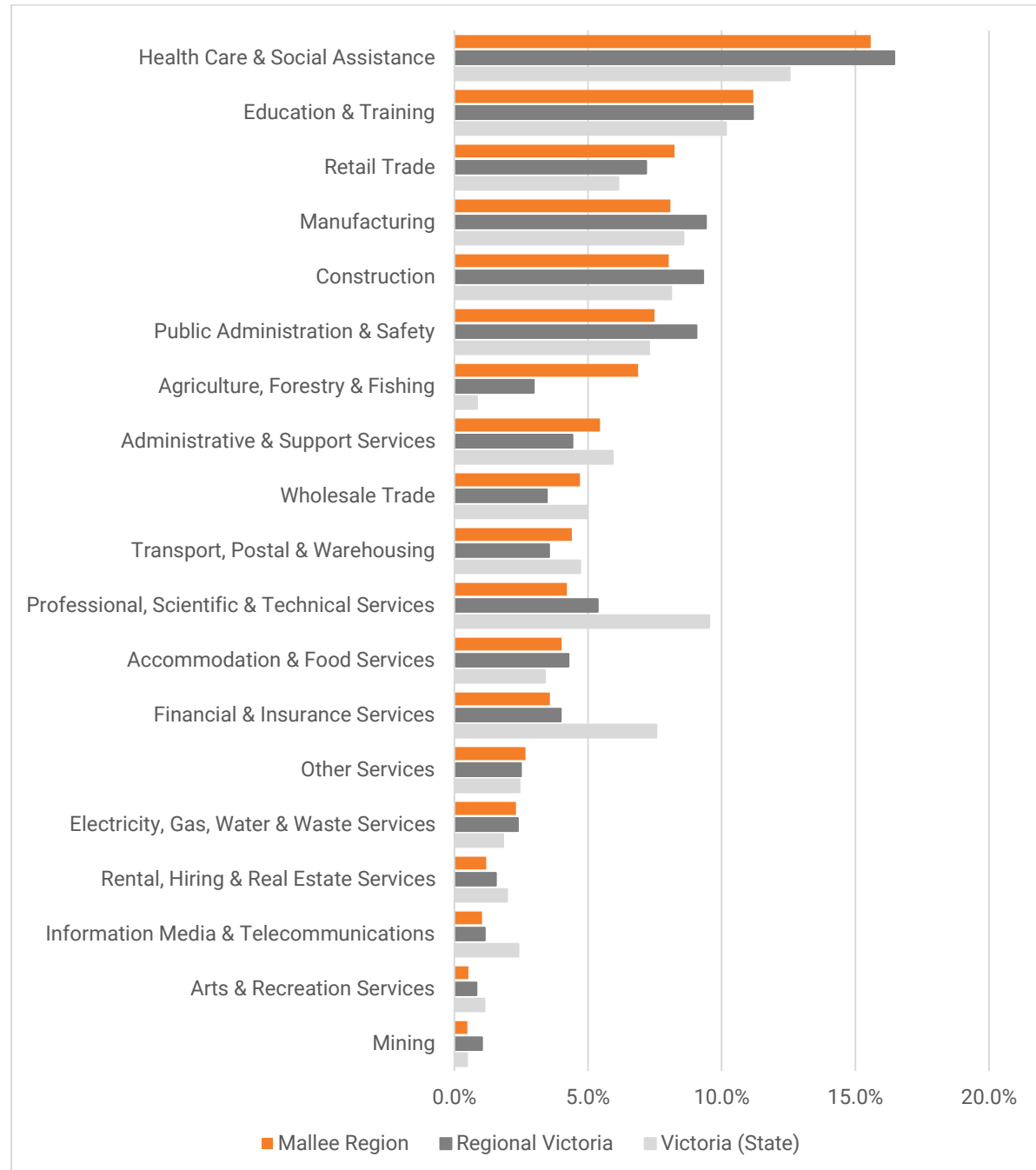


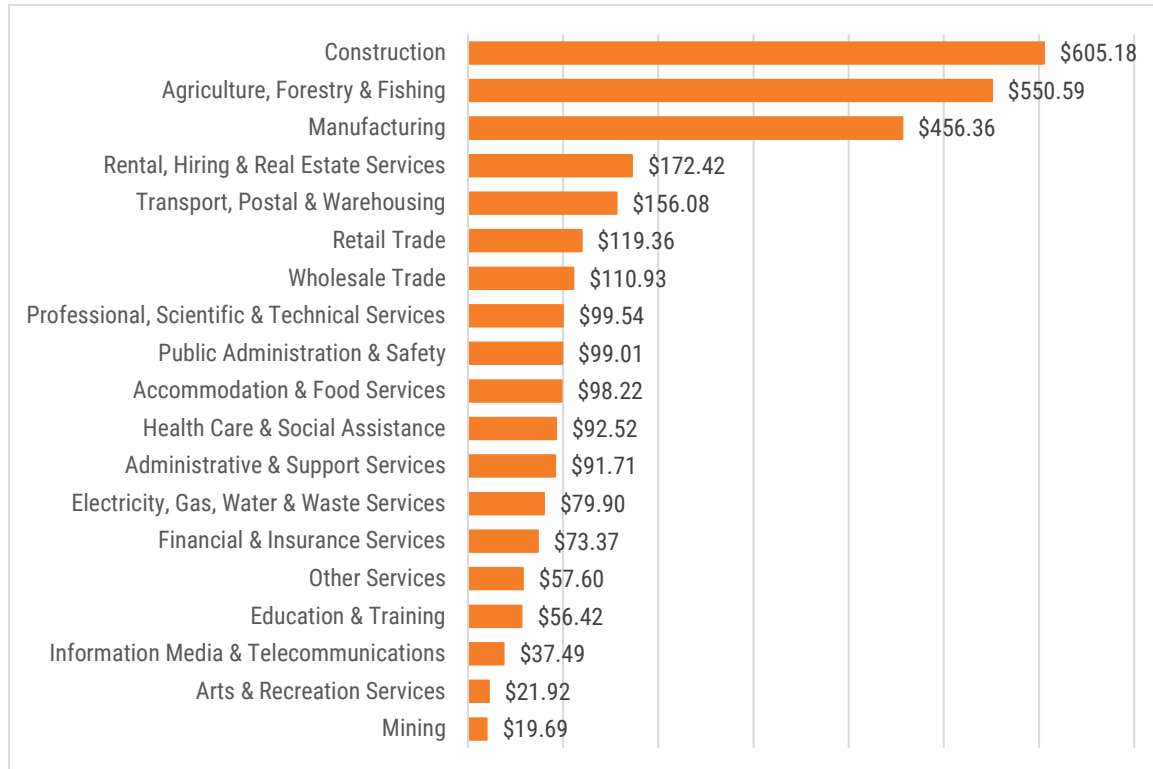
Table 2-4 Wages & Salaries – Mallee Region | Regional Victoria | Victoria (State)

Industry Sector	Mallee Region		Regional VIC		Victoria (State)	
	\$M	%	\$M	%	\$M	%
Health Care & Social Assistance	\$371.703	15.58%	\$7,018.028	16.46%	\$25,176.073	12.55%
Education & Training	\$266.923	11.19%	\$4,762.614	11.17%	\$20,382.260	10.16%
Retail Trade	\$196.587	8.24%	\$3,060.412	7.18%	\$12,306.631	6.13%
Manufacturing	\$192.726	8.08%	\$4,013.813	9.41%	\$17,198.329	8.57%
Construction	\$191.262	8.02%	\$3,968.329	9.31%	\$16,275.563	8.11%
Public Administration & Safety	\$178.543	7.48%	\$3,860.814	9.06%	\$14,630.794	7.29%
Agriculture, Forestry & Fishing	\$164.131	6.88%	\$1,267.439	2.97%	\$1,706.521	0.85%
Administrative & Support Services	\$129.881	5.44%	\$1,885.214	4.42%	\$11,887.605	5.93%
Wholesale Trade	\$112.165	4.70%	\$1,475.086	3.46%	\$9,937.531	4.95%
Transport, Postal & Warehousing	\$104.958	4.40%	\$1,509.613	3.54%	\$9,446.030	4.71%
Professional, Scientific & Technical Services	\$100.323	4.20%	\$2,286.153	5.36%	\$19,136.898	9.54%
Accommodation & Food Services	\$95.766	4.01%	\$1,820.310	4.27%	\$6,798.458	3.39%
Financial & Insurance Services	\$85.240	3.57%	\$1,695.373	3.98%	\$15,163.176	7.56%
Other Services	\$63.480	2.66%	\$1,061.167	2.49%	\$4,898.903	2.44%
Electricity, Gas, Water & Waste Services	\$55.107	2.31%	\$1,012.788	2.38%	\$3,669.755	1.83%
Rental, Hiring & Real Estate Services	\$28.496	1.19%	\$661.561	1.55%	\$3,953.266	1.97%
Information Media & Telecommunications	\$24.805	1.04%	\$483.634	1.13%	\$4,815.241	2.40%
Arts & Recreation Services	\$12.433	0.52%	\$353.371	0.83%	\$2,271.919	1.13%
Mining	\$11.464	0.48%	\$439.548	1.03%	\$956.523	0.48%
Total	\$2,385.995	100.00%	\$42,635.267	100.00%	\$200,611.476	100.00%

2.7.3 Local Expenditure

Local Expenditure data represents the value of intermediate goods and services purchased by local industry sectors within the precinct. A high level of local expenditure on intermediate goods and services proportionate to total output is indicative of well-developed local supply chains and also that any expansion in this sector would typically deliver broad based benefits for the precinct's economy.

Figure 2-13 Mallee Local Expenditure

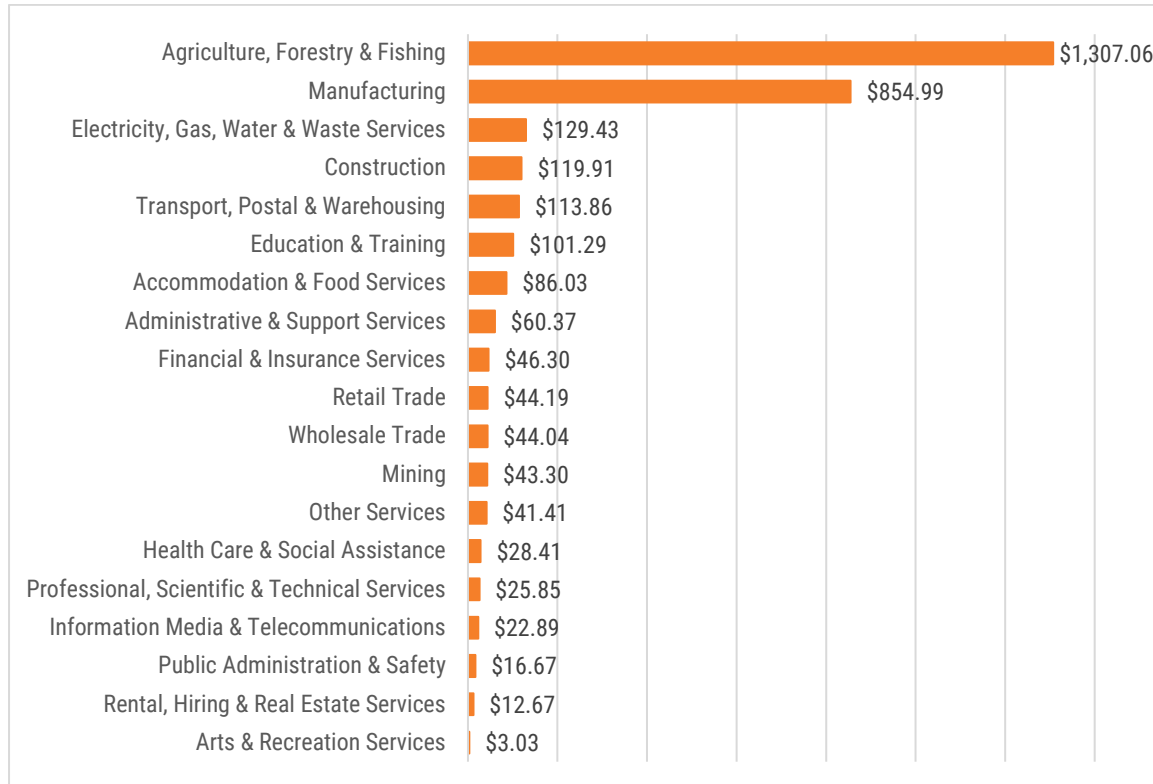


The total local expenditure estimate for Mallee Region is \$2,998.27 million. The 'Construction' sector has the highest level of local expenditure, purchasing \$605.18 million (20.20%) on locally sourced goods and services. This is followed by 'Agriculture, Forestry and Fishing' and 'Manufacturing' yielding \$550.59 million and \$456.36 million, respectively for the Mallee region.

2.7.4 Regional Exports

Regional Exports data represents the value of goods and services exported outside of the region that have been generated by industry sectors within the region. The following graph depicts the contribution to total regional exports generated by each of the industry sectors ranked from highest to lowest.

Figure 2-14 Mallee Regional Exports



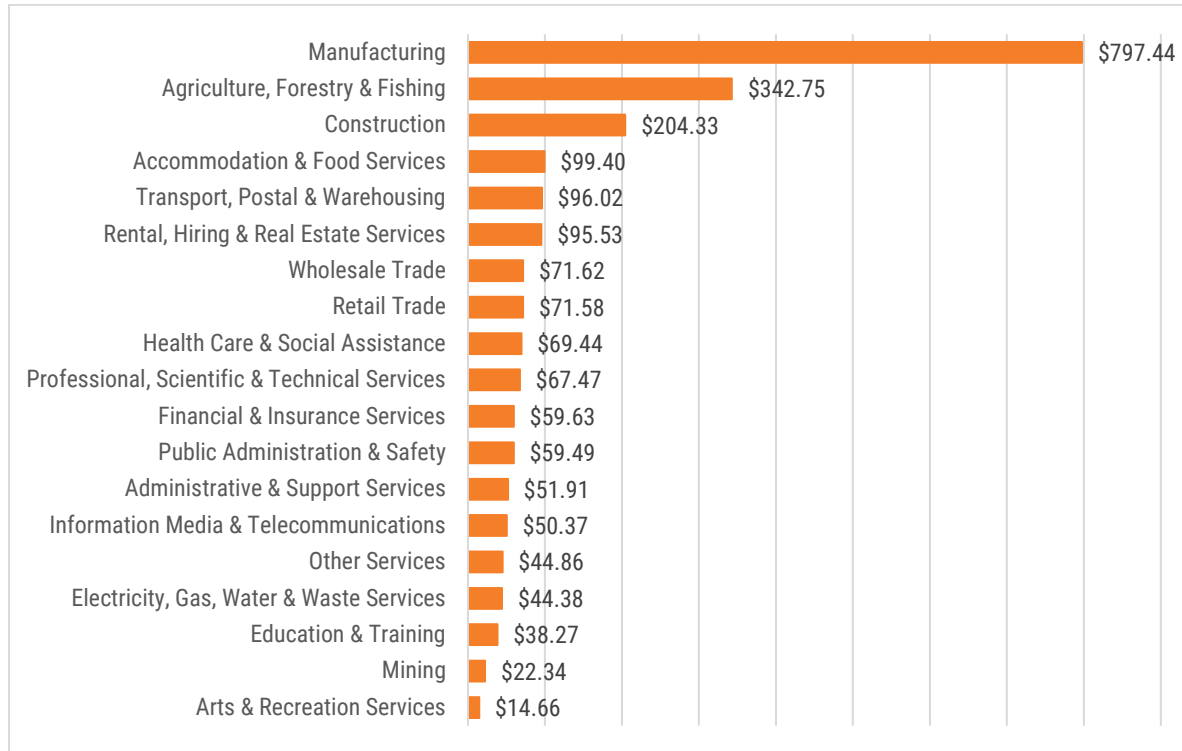
The total regional export estimate for the Mallee region is \$3,101.67 million. The 'Agriculture, Forestry and Fishing' sector represents the vast majority of exports at \$1,307.06 million or 42.10%, followed by 'Manufacturing' (\$854.99 million) and 'Electricity, Gas, Water and Waste Services' (\$129.43 million).

2.7.5 Regional Imports

Regional Imports data represents the value of goods and services imported from outside of the region. Imports are necessary for many reasons and the following graph depicts the value of sector dependency on total regional imports by each of the industry sectors ranked from highest to lowest.

The total regional import estimate for the Mallee region is \$2,301.482 million. The 'Manufacturing' sector represents the vast majority of regional imports at \$797.44 million, followed by 'Agriculture, Forestry and Fishing' (\$342.75 million) and 'Construction' (\$204.33 million).

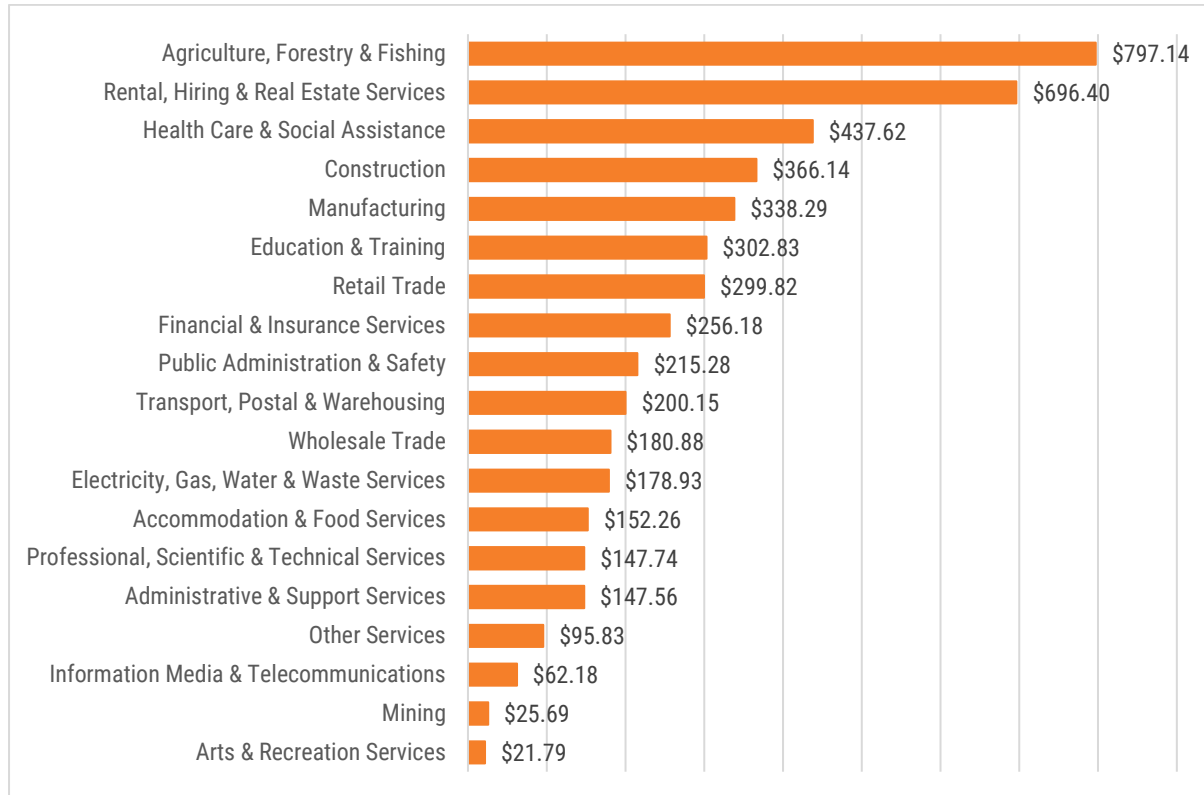
Figure 2-15 Mallee Regional Imports



2.7.6 Value Added

Value-added data represents the marginal economic value that is added by each industry sector in a defined region. Value-added can be calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector, or alternatively, by adding the Wages & Salaries paid to local employees, the gross operating surplus and taxes on products and production. Value-added by industry sector is a major element in the calculation of Gross Regional Product.

Figure 2-16 Mallee Value-Added



The total value-added by the Mallee economy is estimated at \$4,922.69 million. 'Agriculture, Forestry and Fishing' contributes the highest value-added (\$797.14 million), followed by 'Rental, Hiring and Real Estate Services' (\$696.40 million) and 'Health Care and Social Assistance' (\$437.62 million).

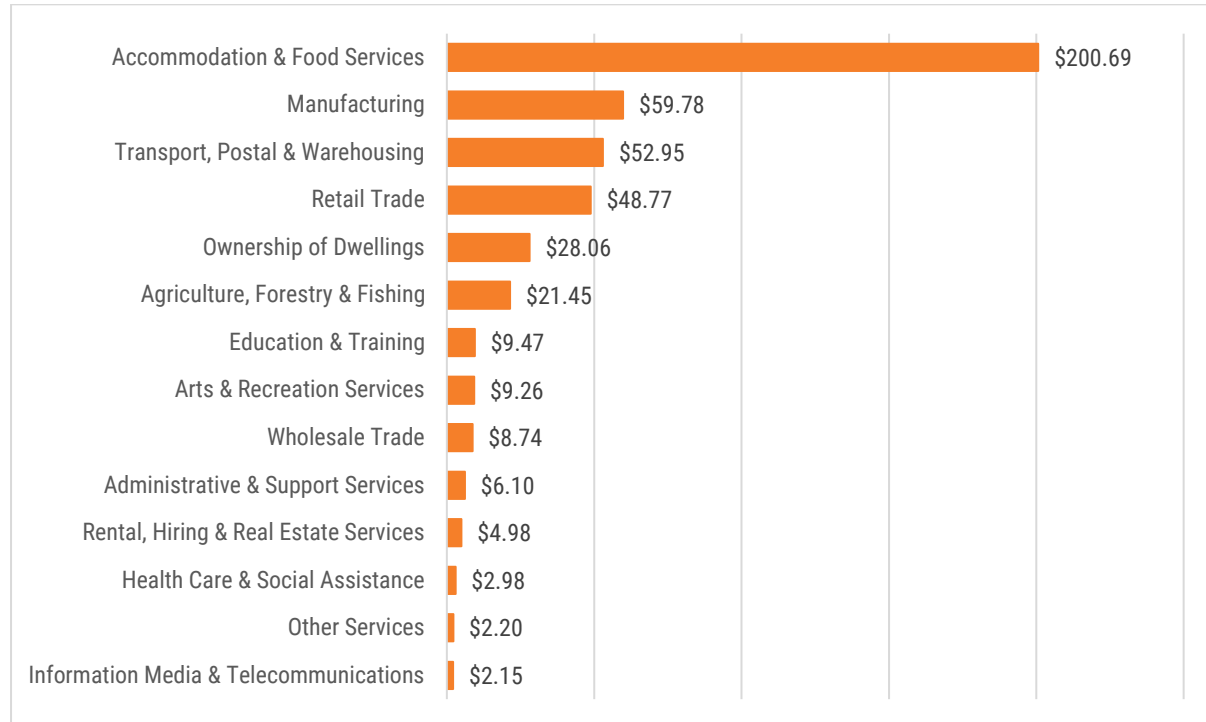
1 Visitor Economy

1.1 Tourism Output

Tourism output represents the gross revenue generated by businesses / organisations in the Tourism sector. Tourism is an amalgamation of a number of industry sectors.

The output attributed by tourism in the Mallee region is estimated at \$457.578 million. 'Accommodation and Food Services' accounts for \$200.687 million (or 43.9% of total output) followed by 'Manufacturing' (\$59.775 million) and 'Transport, Postal and Warehousing' (\$52.953 million).

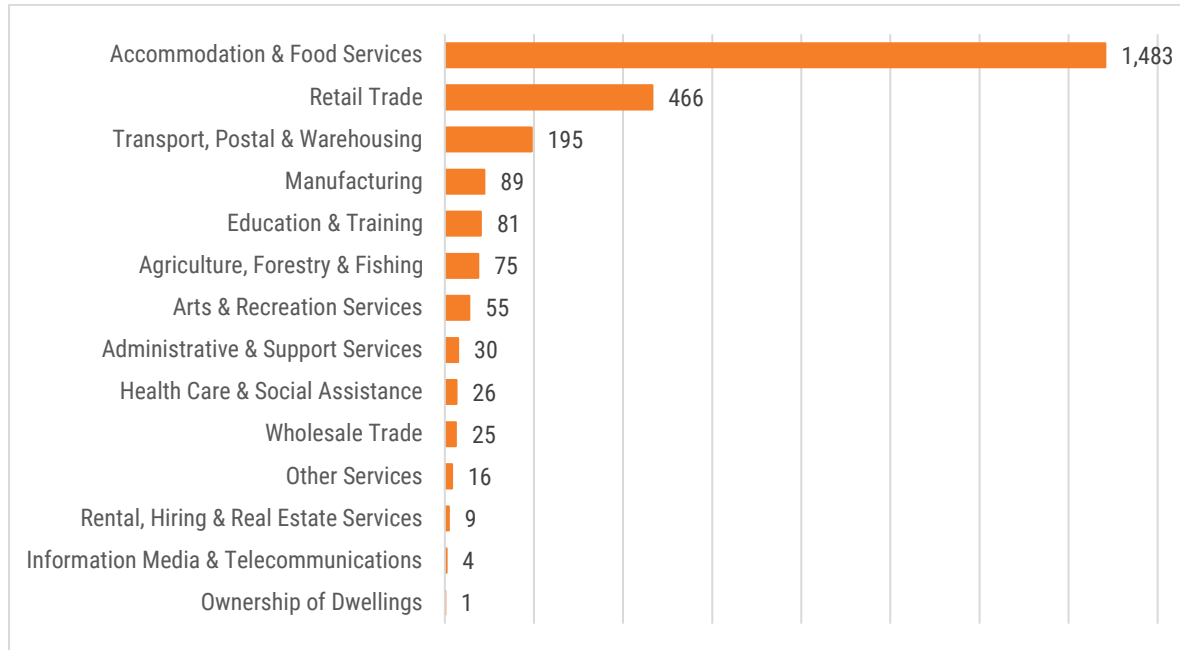
Figure 1-1 Mallee - output attributed to tourism



1.2 Tourism Employment

The total employment (place of work) estimate for Tourism within the Mallee as at the 2016 Census is 2,555 jobs. The 'Accommodation and Food Services' industry sector is the largest sector at 1,483 jobs (58.0%); followed by 'Retail Trade' (466 jobs) and 'Transport, Postal and Warehousing' (195 jobs).

Figure 1-2 Mallee – employment attributed to tourism



1.3 Visitor profile

Tourism Research Australia (TRA) data for Mallee region provides estimates for typical visitor expenditure for domestic day and domestic overnight visitors.

Table 1-1 Mallee Visitor Profile

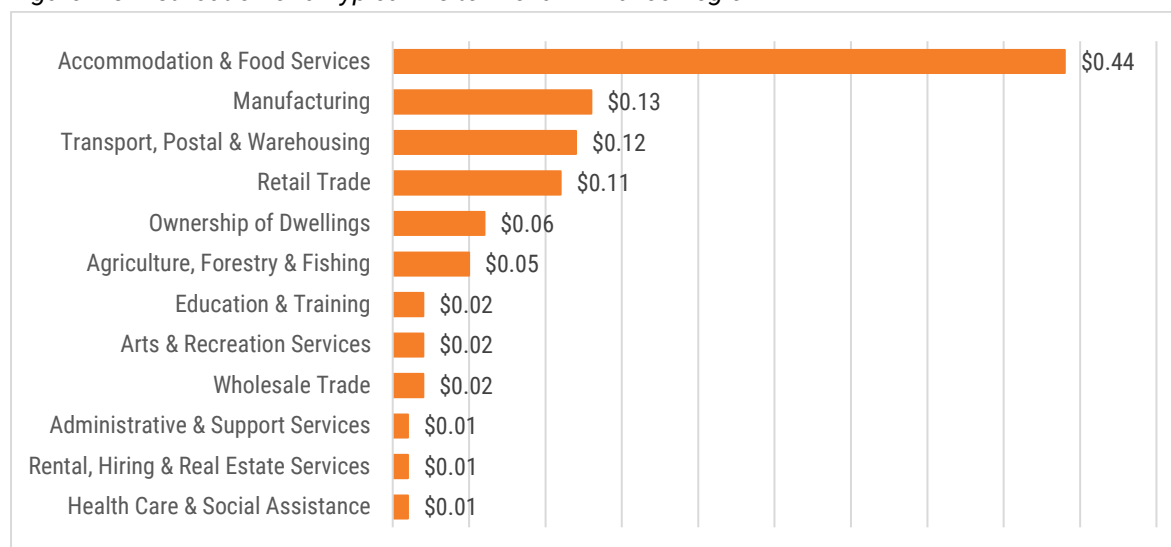
	Average stay (nights)	Average spend per trip (\$)	Average spend per night (\$)
Domestic Day	-	\$169	-
Domestic Overnight	3	\$416	\$144
International	33	\$1,266	\$38

Source: Tourism Research Australia (TRA), Tourism in Local Government Areas 2015; Domestic Day visitors & International visitors: Mallee. Domestic Overnight visitors - Mallee & Wimmera - weighted averages.

1.4 Distribution of Tourist Dollar

For each dollar spent by a visitor in Mallee, it is estimated that typically \$0.44 is spent on Accommodation and Food Services, \$0.13 on Manufacturing and \$0.12 on Transport, Postal and Warehousing. The estimated typical distribution of a dollar spent in the Mallee region is shown in the graph below.

Figure 1-3 Distribution of a Typical Visitor Dollar – Mallee Region



2 Key Propulsive Industry Characteristics

Taking into consideration potential import replacement opportunities as well as current contributions to the regional economy in terms of employment, value-added and local expenditure on goods and services (backward linkages), key propulsive industries sectors have been identified. The details of these contributors are as follows:

- **Employment** - the key social outcome of economy development; employment data represents the number of people employed by businesses / organisations in each of the industry sectors in the Mallee region.
- **Local Expenditure** - details the industry sectors which spend the most on locally sourced intermediate goods and services per dollar of output. These industry sectors may not necessarily make the largest contributions to the Region's economy at present however due to well-developed local supply chains these sectors have a significant capacity to deliver broad based economic benefits for the region.
- **Regional Exports** - represents the value of goods and services exported outside of the Sunraysia (Mallee) Region that have been generated by local businesses / organisations. Another way of defining exports is as an inflow of money into the region, i.e. Motels have an inflow of money from people who live outside the region's boundaries thus they are earning export equivalent dollars.
- **Value-Added** - represents the marginal economic value that is added by each industry sector in a defined region. Value-Added is calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector. Value-Added by industry sector is the major element in the calculation of Gross Regional Product.

These industry sectors may not necessarily make the largest contributions to the region's economy at present but due to well-developed local supply chains these sectors have a significant capacity to deliver broad based economic benefits for the region.

2.1 Key Propulsive Sectors – Mallee

The following key propulsive industry sub-sectors have been identified at the top four for the industry at the 19 sector classification level and sorted alphabetically as the key drivers of the Mallee economy:

- Agriculture, Forestry and Fishing
- Construction
- Manufacturing
- Transport, Postal and Warehousing

Figure 2-1 Key Propulsive Sectors Summary – Mallee (19 Sectors)

Proportion of Key Propulsive Sector Industry Contribution	Local expenditure (\$M)	Employment	Regional Exports (\$M)	Value-Added (\$M)
Agriculture, Forestry and Fishing*	\$550.589 (18.4%)	5,927 (15.6%)	\$1,307.059 (42.1%)	\$797.139 (16.2%)
Construction*	\$605.178 (20.2%)	2,700 (7.1%)	\$119.905 (3.9%)	\$366.139 (7.4%)
Manufacturing*	\$456.360 (15.2%)	2,383 (6.3%)	\$854.987 (27.6%)	\$338.290 (6.9%)
Transport, Postal and Warehousing*	\$156.077 (5.2%)	1,665 (4.4%)	\$113.855 (3.7%)	\$200.145 (4.1%)

*Is a key propulsive sector in any combination of three economic indicators.

In order to further understand the contributions of industry sectors in more detail, the general 19 industry sector classification has been broken down to the 114 industry sub-sector level. The following key propulsive industry sub-sectors have been identified as the key drivers of the Mallee economy to provide more detailed specification of the key drivers of growth in the precinct:

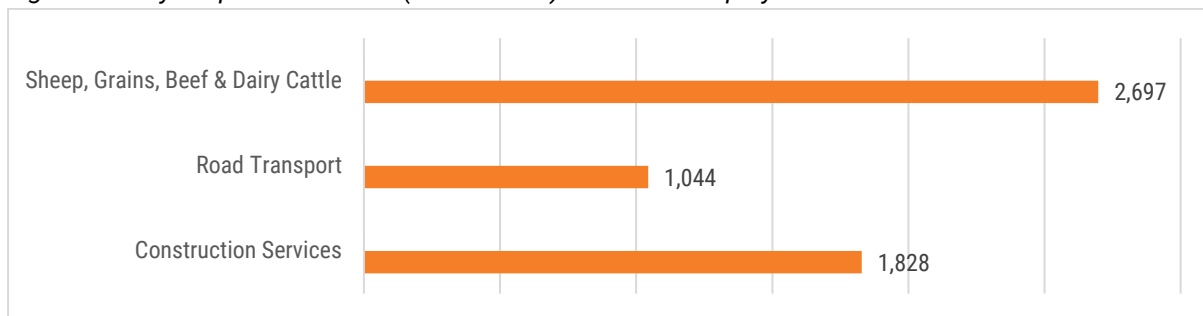
- Construction Services
- Road Transport
- Sheep, Grains, Beef and Dairy Cattle

The above sectors have been identified as within the top ten of all four indicators of local expenditure, employment, value-added and regional exports.

2.1.1.1 Employment

Employment is a key social outcome of economic development; employment data represents the number of people employed by businesses/organisations in each of the industry sectors in the Mallee economy. The total employment estimate for the precinct is 38,038 jobs. The key propulsive industries contribute 5,569 jobs, accounting for 14.6% of the precinct's total jobs.

Figure 2-2 Key Propulsive Sectors (114 Sectors) – Mallee - Employment Contribution

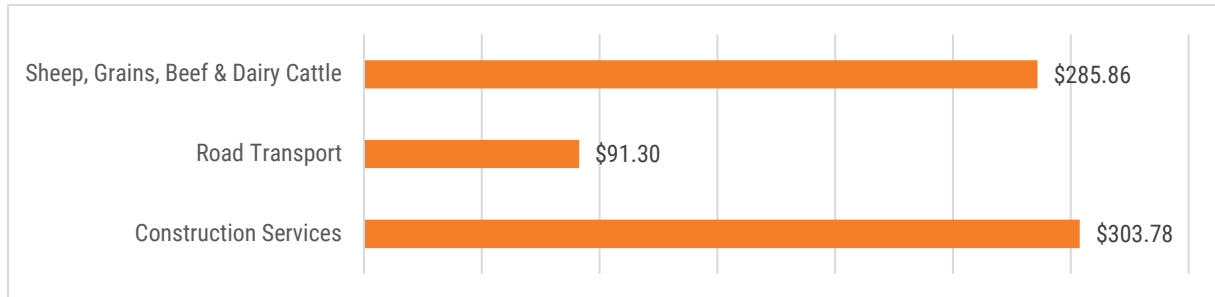


At the 114 industry sector level, the 'Sheep, Grains, Beef and Dairy Cattle' industry sector employs 2,697 jobs, accounting for 7.1% of total the Mallee economy's jobs.

2.1.1.2 Local Expenditure

This report shows the value of intermediate goods and services purchased by industry sectors within the economy. The total local expenditure estimate for Mallee is \$2,998.270 million. The selected sectors contribute \$680.94 million (22.70%) of total local expenditure.

Figure 2-3 Key Propulsive Sectors (114 Sectors) – Mallee - Local Expenditure Contribution



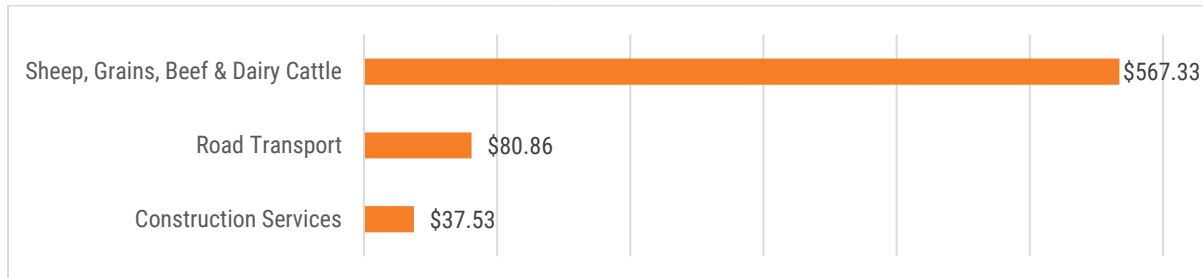
At the 114 industry sector level, 'Construction Services' contributes \$303.78 million in terms of local expenditure, followed by 'Sheep, Grains, Beef and Dairy Cattle' (\$285.86 million).

2.1.1.3 Regional Exports

Regional Exports represents the value of goods and services exported outside of the Mallee region that have been generated by businesses/organisations within the precinct. Another way of defining exports is as an inflow of money into the precinct.

The total regional export estimate for the precinct is \$3,101.666 million. The selected sectors contribute \$685.71 million (22.10%) of total regional exports.

Figure 2-4 Key Propulsive Sectors (114 Sectors) – Mallee - Regional Export Contribution

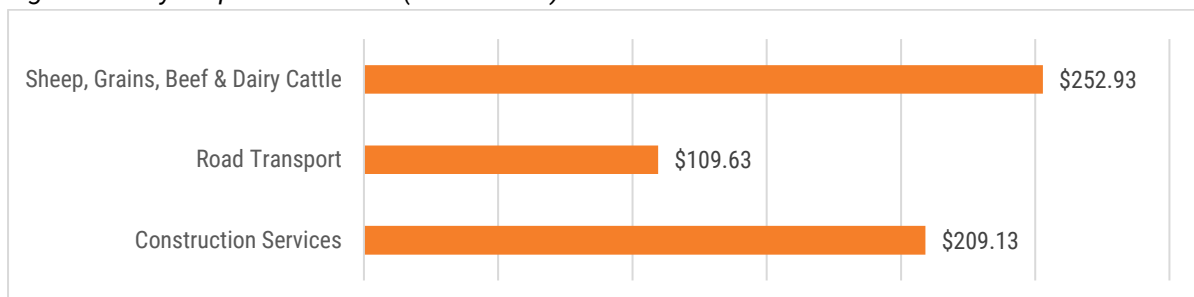


At the 114 industry sector level, the 'Sheep, Grains, Beef and Dairy Cattle' industry sector contributes \$567.33 million in regional exports to the Mallee economy.

2.1.1.4 Value-Added

The total value-added estimate for the Mallee region is \$4,922.692 million. The selected sectors contribute \$571.69 million (11.69%) of total value-added.

Figure 2-5 Key Propulsive Sectors (114 Sectors) – Mallee - Value-Add Contribution



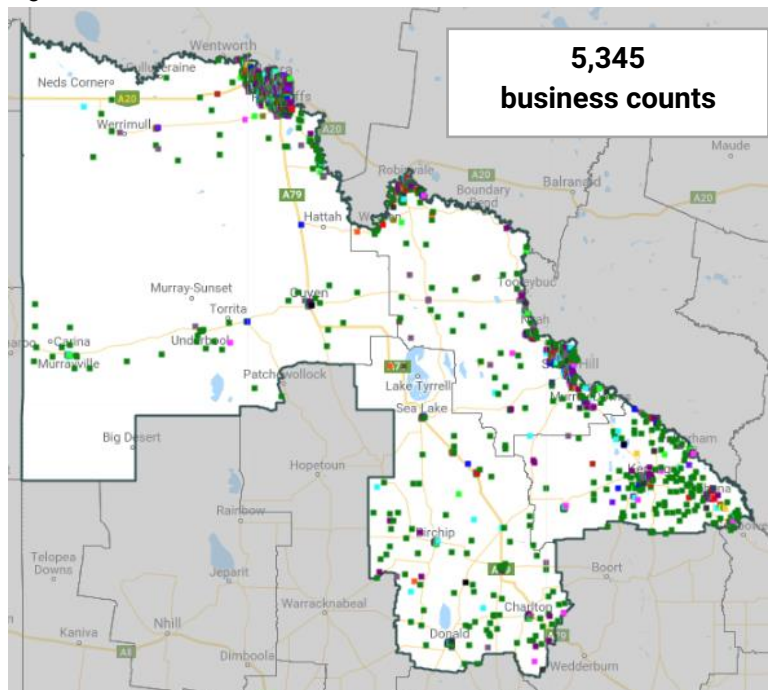
At the 114 industry sector level, the 'Sheep, Grains, Beef and Dairy Cattle' industry sector contributes \$252.93 million to the Mallee economy.

2.2 ABR Business Counts

A business has been counted from the Australian Business Records for the Mallee region if it has current registration of an Australian Business Number and is currently registered for GST.

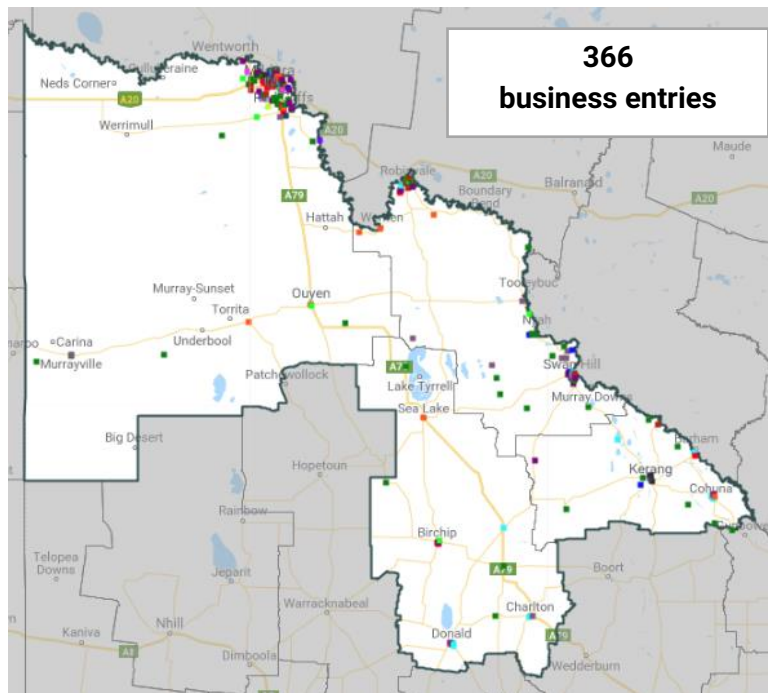
As at 12 February 2018, there were 5,345 businesses operating in the Mallee region. For the year to date (12 February 2017 to 12 February 2018), there were 366 business entries. 233 of these new businesses were located in Mildura (RC), business entries appear concentrated throughout the central Mildura area. Of the new businesses 80 were located in Swan Hill (RC), 28 in Gannawarra (S) and 25 in Buloke (S).

Figure 2-6 Business Counts



Source: GST Listed Businesses, Feb 2018

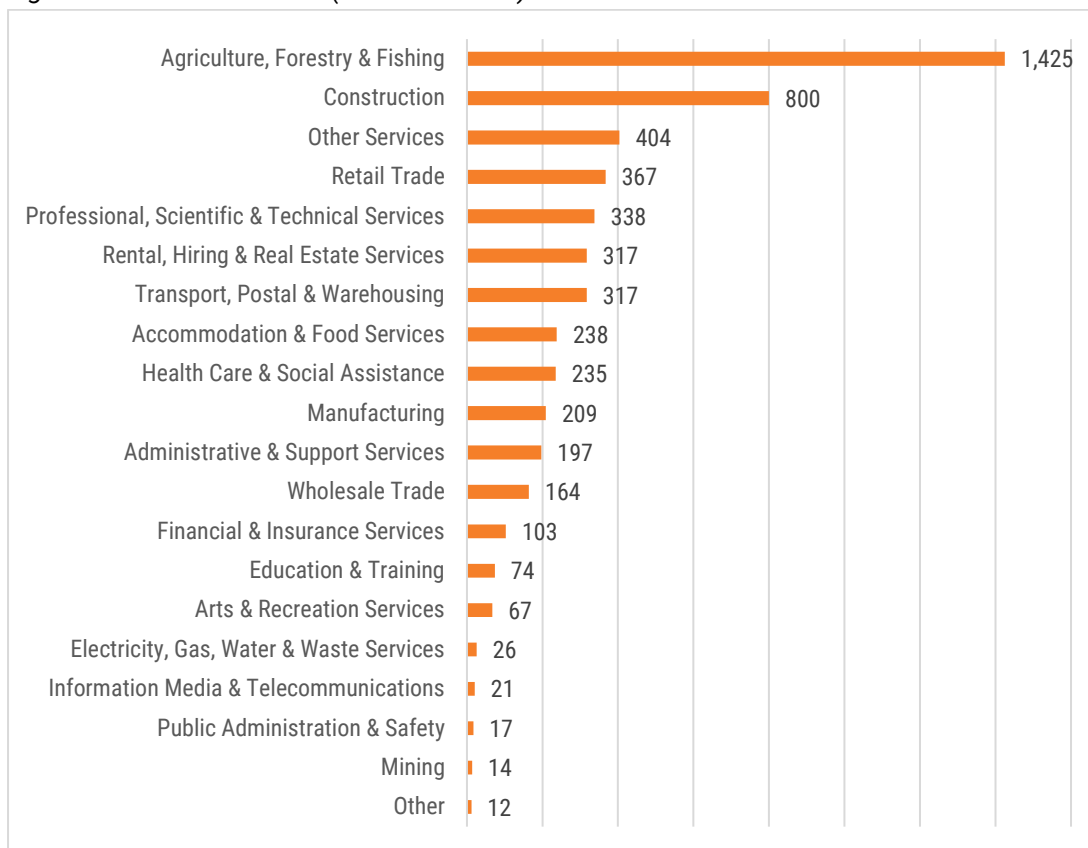
Figure 2-7 Annual Business Entries



Source: GST Listed Businesses, Feb 20187 - Feb 2018

2.3 Sector Business Counts in the Mallee region

Figure 2-8 Business Counts (19 Sector Level)



2.4 Gross Regional Product

The Gross Regional Product for the Mallee region is \$5,331.625 million. The Per Capita GRP for residents in the Mallee region is \$58.451 and the Per Worker GRP is \$140.116.

Table 2-1 Mallee region GRP (Expenditure Method)

GRP (Expenditure Method)	\$M
Household Consumption	\$3,997.979
Government Consumption	\$1,226.492
Private Gross Fixed Capital Expenditure	\$1,520.064
Public Gross Fixed Capital Expenditure	\$300.541
Gross Regional Expenses	\$7,045.076
plus Regional Exports	\$3,128.120
minus Domestic Imports	-\$4,091.203
minus Overseas Imports	-\$750.367
Gross Regional Product	\$5,331.625
Population	91,215
Per Capita GRP (\$'000)	\$58.451
Per Worker GRP (\$'000)	\$140.116

Table 2-2 Mallee GRP (Income Method)

GRP (Income Method)	\$M
Wages and Salaries	\$2,385.995
Gross Operating Surplus	\$2,312.541
Net Taxes - Products & Services	\$460.960
Net Taxes - Production	\$172.129
Gross Regional Product	\$5,331.625
Population	91,215
Per Capita GRP (\$'000)	\$58.451
Per Worker GRP (\$'000)	\$140.166

Mallee accounts for:

- 1.31% of Victoria's GRP
- 1.23% of Victoria's output
- 1.39% of Victoria's employment
- 1.30% of Victoria's value added
- 0.88% of Victoria's local expenditure
- 1.19% of Victoria's wages and salaries
- 3.00% of Victoria's regional exports (relative)
- 2.11% of Victoria's regional imports (relative)

Table 2-3 Summary Indicators

(\$M)	GRP	Output	Employment	Value-Added	Local Expenditure	Wages and Salaries	Regional Exports	Regional Imports
Mallee	\$5,331.625	\$10,222.444	38,038	\$4,922.692	\$2,998.270	\$2,385.995	\$3,101.666	\$2,301.482
Victoria	\$406,525.000	\$829,775.18	2,730,332	\$379,781.76	\$340,685.02	\$200,611.48	\$103,381.77	\$109,308.41