

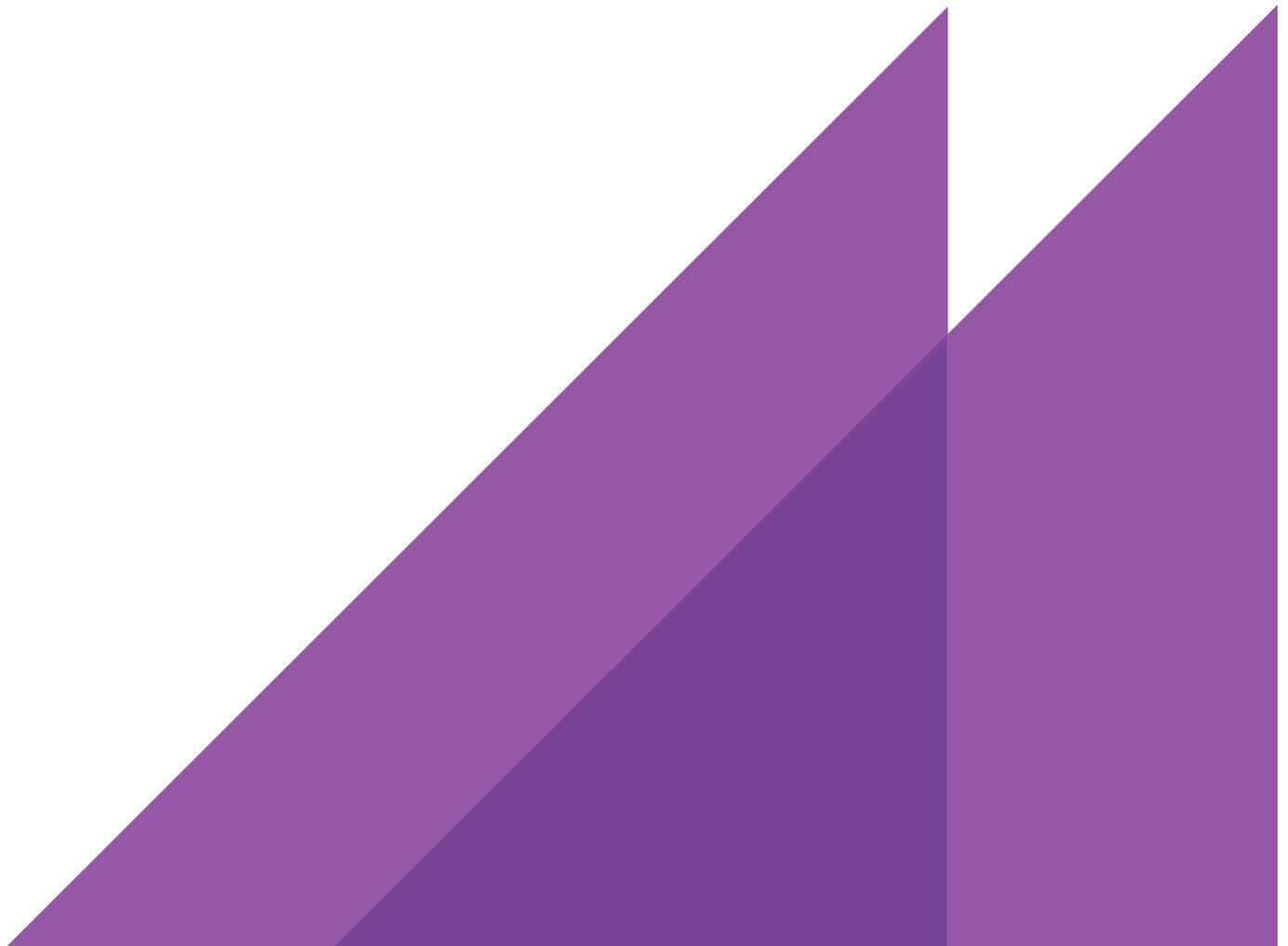
REPORT TO
INFRASTRUCTURE VICTORIA

22 JULY 2019

GREAT SOUTH COAST



INDUSTRY PROFILE
FINAL





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EXECUTIVE SUMMARY

Overview of region

The Great South Coast region is situated in the southwest corner of Victoria's coast, on the border of South Australia. The region is bounded by Wimmera Southern Mallee region in the north and the regions of Central Highlands and Barwon to the east.

The Great South Coast has an agricultural economy based on broadacre cropping and dairy farming, producing approximately one-third of Victoria's milk. Forestry and timber related industries are located in the west of the region. The town of Portland contains an aluminium smelter and western Victoria's main port, the Port of Portland, through which the region's agricultural, forestry and mining products are exported.

Transport links to Melbourne are via the Princes Highway and south west rail line. Major roads and rail lines link the Great South Coast with the rest of Victoria and South Australia. The region has five major highways/freeways, smaller regional airports based at Portland, Warrnambool and Hamilton and a major port at Portland.

Revealed comparative advantage (RCA) index methodology

Using the theories and approaches of revealed comparative advantage (RCA) outlined in the accompanying assessment framework report, an analysis of the comparative advantage of Great South Coast is provided below.

A revealed comparative advantage index (CAI) assumes that the historical economic performance of a region can serve as a good indicator of the industries which have a comparative advantage in that region. The revealed CAI measures the concentration of industries in a particular region compared to the Victorian or Australian economy (that is, it compares the proportion of an industry's contribution to the region's gross value added (GVA), relative to the proportion at the State and National level). Specifically, industries with a CAI above 1 have a higher proportion of GVA in that region compared to the state or national economy and can indicate a potential strength and comparative advantage within the region.

Additional explanation about the RCA and CAI approach used in this profile (including the limitations of the approach) are provided in the body of the report at Chapter 2.

Top 20 highest RCA industries

The following table summarises the highest RCA industries for the local government areas (LGAs) within the Great South Coast region using Level 2 ANZSIC¹ data. The economic performance of the region is highly dependent on primary producing industries such as dairy milk, sheep and lamb and

¹ Australia and New Zealand Standard Industrial Classification

beef production. This is evident in the strong comparative advantage of agriculture in the rural LGAs of the region: Moyne (17.7 CAI Vic comparison), Corangamite (15 CAI Vic comparison), Southern Grampians (10.6 CAI Vic comparison) and Glenelg (7.6 CAI Vic comparison). Unsurprisingly, for all rural LGAs, agriculture represents between 23-55 per cent of their individual LGA gross value add and have all grown by 18-40 per cent in the last decade. These results demonstrate that the region's economic performance is highly concentrated in the primary industries.

Agriculture, Forestry and Fisheries Support Services also demonstrate strong comparative advantage and growth across the four rural LGAs. Although typically representing 2-3 per cent gross value add, this sector complements the primary production industry and will continue to become more important into the future as farm businesses become larger, require more technology and higher input levels.

Along the coast, wild catch and commercial fishing (Glenelg and Warrnambool LGAs) and aquaculture (Glenelg and Moyne LGAs) sectors are well established. Although these sectors are smaller contributors to GVA, wild catch and commercial fishing have strong comparative advantage indices and have experienced the most significant growth of all sectors in the past decade (Glenelg LGA (276 per cent) and Warrnambool LGA (1,680 per cent)). These growth figures reflect the increasing international demand for Australian fresh and frozen seafood products, particularly into Asia.

Of the non-agricultural sectors demonstrating strong comparative advantages, Primary Metal and Product Manufacturing (Glenelg LGA) and Fabricated Metal Product Manufacturing (Glenelg LGA), have declined significantly in the past decade. These sectors represent 4 – 5 per cent of Glenelg's GVA. This highlights the challenges for non-agricultural secondary industries in rural areas to develop and grow alongside food and fibre manufacturing sectors.

TABLE ES 1 TOP 20 HIGHEST REVEALED COMPARATIVE ADVANTAGE BY LGA, GREAT SOUTH COAST

Industry (Level 2 ANZSIC)	LGA	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
4. Fishing, Hunting and Trapping (appears: 2 times)*	Glenelg (S)**	49.0	21.6	276%	2.4%	Top right
3. Forestry and Logging (appears: 2 times)	Glenelg (S)	42.0	23.2	179%	4.2%	Top right
21. Primary Metal and Metal Product Manufacturing	Glenelg (S)	35.6	6.3	-15%	4.5%	Top left
4. Fishing, Hunting and Trapping (appears: 2 times)	Warrnambool (C)	25.8	11.9	1,680%	1.3%	Top right
3. Forestry and Logging (appears: 2 times)	Southern Grampians (S)	17.9	10.0	74%	1.8%	Top right
1. Agriculture (appears: 4 times)	Moyne (S)	17.7	22.1	38%	55.4%	Top right
2. Aquaculture (appears: 2 times)	Glenelg (S)	16.5	5.8	390%	0.3%	Top right
1. Agriculture (appears: 4 times)	Corangamite (S)	15.0	18.7	18%	46.9%	Top right
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Corangamite (S)	14.5	12.7	73%	3.2%	Top right
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Southern Grampians (S)	14.3	12.8	54%	3.2%	Top right
7. Oil and Gas Extraction	Corangamite (S)	12.2	2.1	22%	4.5%	Top right
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Glenelg (S)	11.1	9.8	161%	2.5%	Top right
2. Aquaculture (appears: 2 times)	Moyne (S)	10.8	3.8	240%	0.2%	Top right
1. Agriculture (appears: 4 times)	Southern Grampians (S)	10.6	13.4	40%	33.1%	Top right
8. Metal Ore Mining	Southern Grampians (S)	9.9	0.1	-69%	0.3%	Top left

Industry (Level 2 ANZSIC)	LGA	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Moynes (S)	8.4	7.4	75%	1.9%	Top right
1. Agriculture (appears: 4 times)	Glenelg (S)	7.6	9.5	26%	23.7%	Top right
48. Water Transport	Glenelg (S)	6.9	6.5	186%	0.7%	Top right
38. Commission-Based Wholesaling	Southern Grampians (S)	6.6	3.7	-23%	0.8%	Top left
22. Fabricated Metal Product Manufacturing	Glenelg (S)	6.3	6.4	-32%	5.4%	Top left

Note: *Revealed industries that appear in more than one LGA are identified *appears: x times. **LGAs are classified as follows: (C) Cities, (S) Shires, (RC) Rural Cities.
SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

SWOT and needs analysis

To help understand what the infrastructure investment opportunities and constraints look like for the Great South Coast, ACIL Allen undertook a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, as well as a needs analysis. The information underpinning the SWOT and needs analysis was derived from a desktop research process which examined publicly available data and information as well as feedback from stakeholder consultations. Table ES2 provides the results of this analysis for the industries identified in Table ES1. That is, Table ES2 provides the results of the SWOT and needs analysis for those industries identified in Table ES1 that are deemed to have a high CAI and high share of GVA for the LGA they operate in. It identifies the potential investment opportunities and constraints that are important considerations for meeting the future infrastructure requirements of revealed sectors and other sectors important to the region's economy.

Firstly, revealed industries identified in Table ES1 are assessed for their RCA comparison to Victoria, the contribution to an LGA's GVA and consideration of the past decade's performance. This approach identifies the most important industries to the region. This guides the initial SWOT analysis process. However, due to some of the limitations of the RCA (see Section 2.1), it is important to review available industry, sector and regional development literature as well as feedback from regional stakeholders to identify industries that the region considers as important for future economic development. In the Great South Coast's case, opportunities have been identified in Tourism.

Due to the categorisation of industries in the ANZSIC codes, tourism does not have a demonstrated RCA. The data simply will not allow for this calculation to be undertaken. However, this sector demonstrates many economic development opportunities for the Great South Coast. A further assessment of the priority industries considers service industries that may contribute to the performance of a primary or secondary industry – for Tourism this may include Accommodation Services.

In order to include industries that could be considered emerging or have demonstrated growth but are starting from a low base, it is necessary to cross-check the opportunities identified in the literature with the emerging industries in the region. Outside of Agriculture, Manufacturing, Energy and Mining and Tourism (Accommodation), there are no industries in the top 20 that are identified in the literature that either align with the small industries (<1% GVA), demonstrate high RCA or have demonstrated strong growth over the past decade. This may reflect the limitations of the revealed industry categorisation at the ANZSIC code 2-digit level, which presents a high-level industry descriptor.

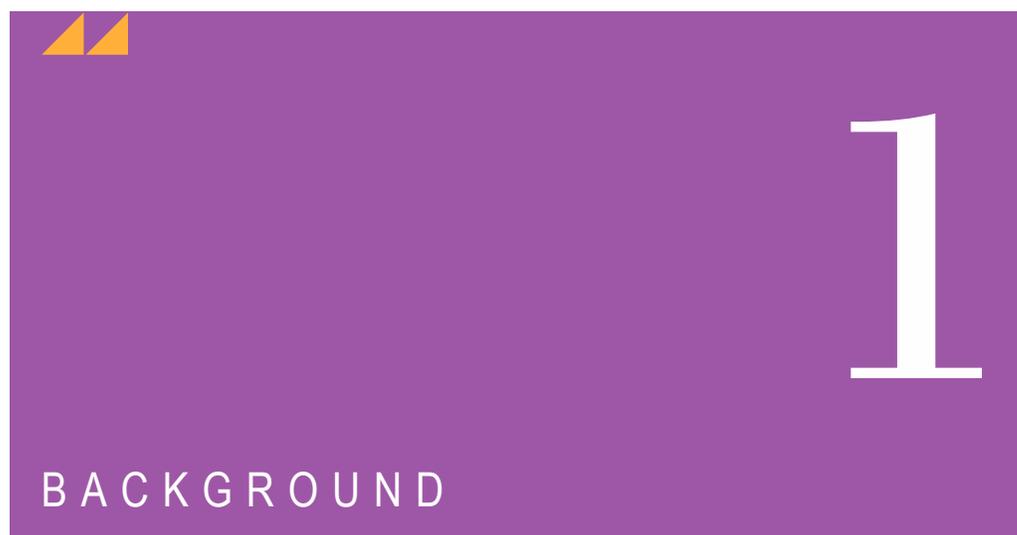
The SWOT analysis is then used to identify actionable or practical issues which are compared against the documented infrastructure needs of the region/industries. This comparison is then used to identify potential opportunities and constraints facing industries which could be addressed through future infrastructure investments.

TABLE ES 2 WHAT ARE THE INFRASTRUCTURE INVESTMENT OPPORTUNITIES AND CONSTRAINTS FOR GREAT SOUTH COAST?

Industry	Revealed sectors	Relevant LGAs	Identified needs	Opportunities to address needs	Constraints to economic development of the sector
Agriculture, Forestry and Fisheries	Agriculture (Dairy, lambs and wool and beef)	Corangamite Glenelg Moyne Southern Grampians	Improved accessibility of rail and road freight access for primary industries with processors and Melbourne	Develop road, rail freight infrastructure that links primary industries with domestic and international markets	Inadequate road and rail freight connection limits investment in local processing, manufacturing and domestic markets
	Agriculture (Dairy, lambs and wool and beef)	Corangamite Glenelg Moyne Southern Grampians	Improved access to broadband internet on-farm	Increased deployment of mobile and NBN telecommunication infrastructure	Inadequate access to internet on-farm reduces farm businesses capacity to adopt and apply technology that increases productivity and profitability
	Forestry and wood products	Glenelg Southern Grampians	Increased haulage requirements of roads that link forestry and wood product to wood product manufacturers	Non infrastructure related opportunities identified as the region's primary opportunities (e.g. review haulage regulations between forestry and wood product and wood product manufacturer corridors)	Non infrastructure related constraints identified as the region's primary constraints (e.g. regulatory barriers such as haulage requirements for road freight can reduce forestry and wood product supply chain efficiency)
		Glenelg Southern Grampians	Optimal road freight supply chain linking Blue Gum plantations and the Port of Portland. This relates to work being undertaken on the Green Triangle Freight Routes	Potential to increase blue gum wood chip exports through better transport infrastructure to and from Port of Portland	
	Fishing, hunting and trapping (wild catch southern rock lobster and abalone)	Glenelg Warrnambool	Improved road and rail freight access for wild catch and commercial fishing industries	Develop road and rail infrastructure that links wild catch and commercial fishing sectors with domestic and international markets	Inadequate road and rail freight access between wild catch and live seafood markets in Asia. The closest air freight access point is Avalon
	Aquaculture	Glenelg Moyne	Improved road freight access for wild catch and commercial farming industries	Develop road infrastructure that links wild catch and commercial farming sectors with domestic and international markets	Inadequate road freight access between wild catch and live seafood markets in Asia.

Industry	Revealed sectors	Relevant LGAs	Identified needs	Opportunities to address needs	Constraints to economic development of the sector
Tourism	Accommodation and services sectors (Identified as emerging industry, based on the future opportunities identified in the SWOT however, it does not have a RCA as such)	Warrnambool Glenelg Southern Grampians Corangamite Moyne	Improved facilities at nature-based tourism sites will increase demand	Encourage investment in service provision and recreational facilities/amenities in nature-based tourism locations	Domestic and International tourists are less inclined to visit tourist destinations that are less accessible and do not provide a full experience (services) and accommodation options
			Progress with other enabling infrastructure / tourism infrastructure projects identified in the Shipwreck Coast Master Plan	Encourage the development of accommodation options for and around these locations	
			Progress with other enabling infrastructure needed for the World Heritage listed Budj Bim, particularly road infrastructure	Improving access to Budj Bim to encourage further visitation and cope with expected increase in visitation due to World Heritage listing	
			Maintenance of Great Ocean Road	Safety improvements/coastal protection infrastructure along Great Ocean Road	Coastal erosion will impact Great Ocean Road and its attractiveness as a key tourism destination
			Domestic and international tourists expect access to internet when visiting regional Victoria	Increase investment in telecommunication infrastructure and facilities at strategic nature-based tourism locations	Domestic and International tourists are less inclined to visit tourist destinations that do not provide a full experience (services) and digital connectivity
Mining and Energy	Gas mining	Warrnambool Moyne Corangamite	Gas field development requires access to transmission and basic utilities	Opportunity for associated gas transport and logistics, including helicopter operations at Warrnambool Regional Airport create linkage to gas fields	

Notes: <https://www.abc.net.au/news/2017-05-21/sand-used-to-halt-beach-erosion-rise-along-great-ocean-road/8543552>
SOURCE: ACIL ALLEN



1.1 Overview of the Great South Coast

The Great South Coast is situated in the southwest corner of Victoria's coast on the border of South Australia. The region is bounded by Wimmera Southern Mallee in the north and the regions of Central Highlands and Barwon to the east. The Great South Coast region accounts for 10 per cent of Victoria's land area (covering an area of 22,883 km²). As at 2018, the Great South Coast had an estimated resident population (ERP) of 103,689 persons or 1.6 per cent of Victoria's population. The region's population and land size by local government area (LGA) are shown in Table 1.1 below:

TABLE 1.1 POPULATION AND AREA, LGA AND SUB-REGION, GREAT SOUTH COAST, 2018

Local Government Area and (sub-region)	ERP	Share of regions	
		ERP	Area (km ²)
Warrnambool City (Warrnambool regional hub)	34,862	34%	121
Glenelg Shire (Rural areas)	19,665	19%	6,219
Southern Grampians Shire (Rural areas)	16,135	16%	6,654
Moyne Shire (Rural areas)	16,887	16%	5,482
Corangamite Shire (Rural areas)	16,140	16%	4,408
Great South Coast⁽¹⁾	103,689	100%	22,883

Notes: (1) totals may not sum to 100 per cent due to rounding.

SOURCE: ABS CAT NO. 3218.0, REGIONAL POPULATION GROWTH, AUSTRALIA.

The LGAs of the Great South Coast are further aggregated into sub-regions based on economic and environmental characteristics (see Figure 1.1 for a map of sub-regions).

- Warrnambool regional hub (yellow)
- Rural areas (blue)

FIGURE 1.1 SUB-REGION MAP, GREAT SOUTH COAST, 2019



SOURCE: GREAT SOUTH COASTAL PROFILE 2018.

The Great South Coast region has an agricultural economy based on broadacre cropping and dairy farming, producing approximately one-third of Victoria's milk. Forestry and timber related industries are located in the west of the region. The town of Portland contains an aluminium smelter and western Victoria's main port, the Port of Portland, through which the region's agricultural, forestry and mining products are exported. Transport links to Melbourne are via the Princes Highway and south west rail line.

Further details of the Great South Coast's key attributes, infrastructure, strengths, challenges and sub-regions are provided in the following sections.

1.1.1 Key natural and environmental attributes

Key attributes of the Great South Coast in terms of natural resources and environmental features are described below.

Natural resources include:

- wind and geothermal energy
- timber
- sand
- stone
- gold
- oil shale
- mineral sands.

Key environmental assets include:

- Twelve Apostles marine and coastal parks
- Budj Bim
- Great Otway

- Grampians National Parks
- farmland (suitable for dairy farming)
- forests (timber production).

1.1.2 Key infrastructure

Major roads and rail lines link the Great South Coast with the rest of Victoria and South Australia. The region has five major highways/freeways, several smaller regional airports based at Portland, Warrnambool and Hamilton and a major port at Portland. A summary of key transport, water and power infrastructure is provided in Box 1.1.

BOX 1.1 KEY INFRASTRUCTURE, GREAT SOUTH COAST, 2019

Roads

- Princes Highway (1,898 kms): Adelaide - Melbourne (services coastal towns and South Australia).
- Hopkins Highway (49 kms): Warrnambool - Mortlake (joins Hamilton Highway with Princes Highway).
- Glenelg Highway (301 kms): Ballarat - Mount Gambier (services western Victoria and South Australia).
- Hamilton Highway (231 kms): Geelong - Hamilton (services western Victoria).
- Henty Highway (360 kms): Portland - Lascelles (services western Victoria).

Rail

- Direct passenger and freight rail route from Warrnambool to Melbourne.
- Freight rail access to Port of Portland from Northern Victoria via Ararat.
- Freight passenger line between Ararat and Geelong.

Water

- Rocklands reservoir (water storage).
- Various underground water sources (used in the dairy industry).

Power

- Wind farms located along the coastal region.
- Portland powerline supplies electricity from Victoria's national grid.

Airports

- Small local airports located at Warrnambool, Portland and Hamilton.

Seaports

- Port of Portland (supports export of agricultural, forestry and mining products).

SOURCE: MALLEE REGIONAL PROFILE 2018 AND GREAT SOUTH COASTAL STRATEGIC PLAN.

Locations of major transport routes and seaports for the region are shown in Figure 1.2.

FIGURE 1.2 TRANSPORT INFRASTRUCTURE, GREAT SOUTH COAST, 2019



SOURCE: GREAT SOUTH COASTAL PROFILE 2018.

1.1.3 Other regional attributes

The Great South Coast is naturally endowed with fertile farmland, forests for timber and national parks which support tourism. The Great Southern Coast region's townships are also major service centres and sources of employment. A summary of these attributes is provided in Box 1.2.

BOX 1.2 REGIONAL STRENGTHS, GREAT SOUTHERN COAST REGION, 2019

Agriculture

- Major producer of dairy products.
- Broadacre cropping in the north of the region.
- Forests located in the west of the Region (allows development of local timber industry).
- Major employer and source of economic activity (accounts for 29 per cent gross value added).

Tourism

- Environmental assets (e.g. Grampians National Park, marine reserves, coastal regions).
- Infrastructure assets (e.g. Great Ocean Road).
- High tourism visitation and expenditure.

Warrnambool and Portland

- Regional hubs, major service and employment centres.
- Port of Portland through which locally made products are exported.

Land

- Fertile farming area suitable for dairying and broadacre cropping.

SOURCE: GREAT SOUTH COASTAL PROFILE 2018.

1.2 Sub-regions of Great South Coast

There are key differences across the Great South Coast relating to key attributes and infrastructure. A large share of the population lives in several major regional centres while agricultural activity is spread across rural communities. These sub-regional differences are discussed for Great South Coast's two sub-regions below.

Warrnambool regional hub (Warrnambool City Council)

Comprising the Warrnambool City Council, the "Warrnambool regional hub" sub-region (highlighted in yellow in Figure 1.1) contains 34 per cent of the Great South Coast's population and accounts for only 1 per cent of its area. Key facts about the Warrnambool regional hub sub-region include:

- contains major regional centre Warrnambool
- growing population
- largest industry is healthcare (by Gross Value Added)
- relocation of health care services from rural areas to Warrnambool city
- higher household incomes compared with rural areas
- growth in the service sector
- relatively high levels of disadvantage relative to the rest of Victoria.

Rural areas

Comprising the Glenelg, Southern Grampians, Moyne and Corangamite Shire councils, the "Rural areas" sub-region (highlighted in blue in Figure 1.1) contains 66 per cent of the Great South Coast population and accounts for 99 per cent of its area. Key facts about the rural areas sub-region include:

- the major townships of Hamilton and Portland and smaller townships of Casterton, Mortlake and Camperdown
- largest industry is agriculture (by Gross Value Added)
- population decline in inland rural areas (growth in some coastal townships)
- declining working age population
- major centre of Victoria's dairy industry
- higher levels of disadvantage compared to the rest of Victoria
- high levels of school leavers in education and training (above Victorian average)
- high-school completion rates below the Victorian average.

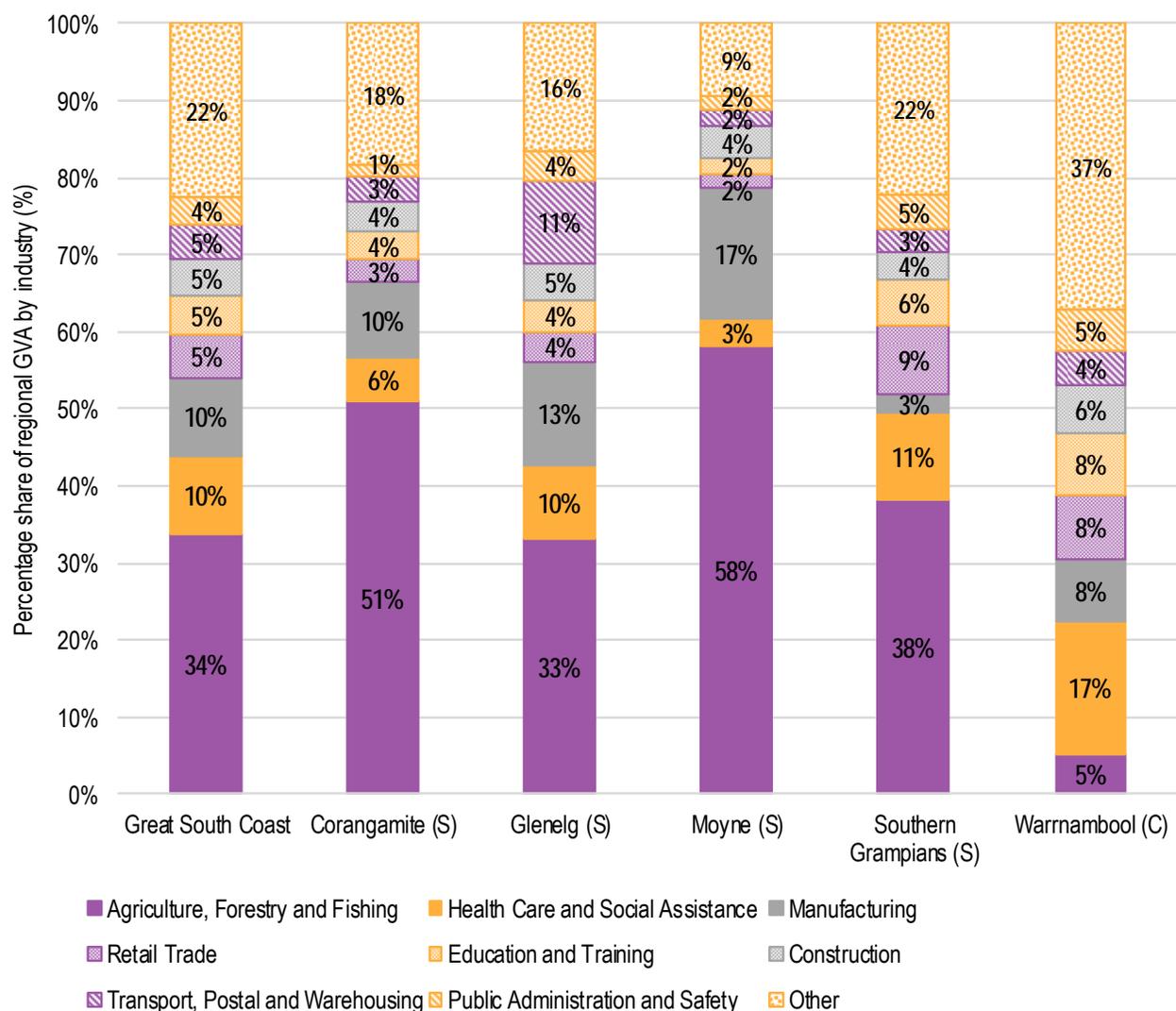
1.3 Industry composition

The Gross Regional Product (GRP) of the Great South Coast is approximately the sum of industrial Gross Value Add (GVA).² Figure 1.3 shows the 2017-18 distribution of GVA across the largest industries for the Great South Coast. The biggest industries by GVA in the Great South Coast are: Agriculture, Forestry and Fishing (34 per cent), Health Care and Social Assistance (10.2 per cent), Manufacturing (10.1 per cent) and Retail Trade (5.5 per cent). These four industries comprise over half of the Great South Coast's GVA.

Warrnambool has a diversified economy with a relatively even spread across multiple sectors. There is noticeable variation in the size of the biggest industries across the key sub regions of the Great South Coast. Some noticeable differences include the Corangamite and Moyne LGAs which have very large Agriculture, Forestry and Fishing industries at 51 per cent and 58 per cent respectively. Glenelg has a relatively large Electricity, Gas, Water and Waste Service industry at 11 per cent compared to 5 per cent for the whole region. Warrnambool has a relatively large Health Care and Social Assistance sector at 17 per cent.

² GRP is the sum of GVA at basic prices plus taxes less subsidies on products.

FIGURE 1.3 GVA SHARE OF KEY INDUSTRIES IN THE GREAT SOUTH REGION, 2017-18



Note: Other includes industries with less than 3 per cent of Great South Coast GVA: Professional, Scientific and Technical Services; Financial and Insurance Services; Accommodation and Food Services; Other Services; Administrative and Support Services; Mining; Rental, Hiring and Real Estate Services; Information Media and Telecommunications; Arts and Recreation Services. LGAs are classified as follows: (C) Cities, (S) Shires, (RC) Rural Cities.

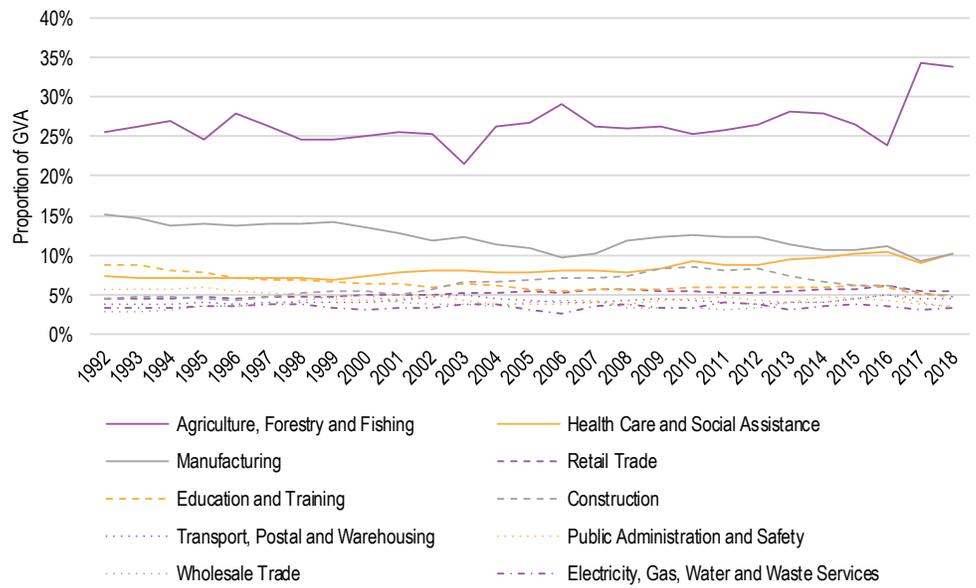
SOURCE: IV DATA 2019

Figure 1.4 shows the GVA of key industries in the Great South Coast from 1991-92 to 2017-18. The share of GVA from Manufacturing has declined from 15 per cent in 1992 to 10 per cent in 2018; similarly construction has seen a large decline over the past decade falling from 7.4 per cent in 2008 to 4.8 per cent in 2018.

Since 2007-08, Agriculture, Forestry and Fishing’s share of the region’s GVA has increased from 26 per cent to 34 per cent (a 30 per cent increase). Health Care and Social Assistance’s share of the regional GVA has also increased over the past decade, from 8 per cent in 2007-08 to 10 per cent in 2017-18 (a 28 per cent increase).

This is somewhat consistent with trends occurring across Victoria, such as a general decline in the manufacturing sectors and an increase in service-based industries, particularly health-related services associated with ageing populations.

FIGURE 1.4 GVA SHARE OF KEY INDUSTRIES IN THE BARWON REGIONS 1991-92 TO 2017-18



SOURCE: IV DATA 2019



2.1 Revealed comparative advantage index

Using the theories and approaches of revealed comparative advantage (RCA) outlined in the accompanying assessment framework report, an analysis of Great South Coast's comparative advantage is provided below.

A revealed comparative advantage index (CAI) assumes that the historical economic performance of a region can serve as a good indicator of the industries which have a comparative advantage in that region. An RCA approach enables the identification of significant industries in each region while using a relatively simple and consistent methodology. In other words, with RCA, the results are truly comparative across regions because the results are derived in a consistent way. Specifically, industries with a CAI above 1 have a higher proportion of GVA in that region compared to the state or national economy and can indicate a potential strength of a region.

The revealed CAI measures the concentration of industries in a particular region compared to the Victorian or Australian economy (that is, it compares the proportion of an industry contribution to the regions GVA, relative to the proportion at the State and National level). The reasons why both comparators are important are outlined in Box 2.1 below.

While both comparisons have been used for this analysis and reported in the sections below, the analysis of the top revealed industries focuses on industries assessed against the Victorian CAI. This has been done for two reasons. First, it is consistent with the focus of this study, which is on Victoria's regions. Second, there were some minor gaps in the Level 2 ANZSIC data used to undertake the LGA level analysis which would have impacted the consistency in which national CAI comparisons can be reported.

Furthermore, the analysis in this chapter reports on rates of industry growth as it provides insight into industries that have grown rapidly over the past decade and hence could be expected to continue to grow in the future. It also identifies industries that have declined over the past decade.

BOX 2.1 EXPLANATION UNDERPINNING ACIL ALLEN'S USE OF VICTORIAN AND NATIONAL CAI COMPARISONS

The RCA approach was developed initially to calculate relative advantage or disadvantage of a country in certain goods and services as evidenced by trade flows. In recent years, the concept has been adopted to assess the comparative advantage of industries in a region.

When assessing regional RCA, there was a question of which denominator to use in the index.

A key reason for using a national denominator (in addition to a Victorian denominator) to calculate the CAI for various industries is that while a particular industry may be significant compared to the Victorian average, it may not be significant compared to the broader Australian economy. When the CAI for a particular industry within a particular region shows a similar strength compared to both the Victorian and the national averages, this is likely to indicate a stronger comparative advantage than one in which the two CAI's conflict.

Therefore, under this framework, two comparisons (Victorian and national) have been provided to assist in understanding a region's/industry's comparative advantage from multiple perspectives.

For example, the CAI of a mining commodity may be very strong in a particular region compared to Victoria because there happens to be an economic deposit within that region that is not available elsewhere in Victoria. When compared to Australia as a whole, however, a low CAI would indicate that there are more competitive mining provinces elsewhere in Australia. In contrast, a high CAI using both the Victorian and national denominators is likely to indicate that not only is there an economic deposit present, but that it is potentially a world class deposit.

SOURCE: ACIL ALLEN

Limitations of CAI

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

2.2 Great South Coast (Level 1 ANZSIC analysis)

Figure 2.1 shows the CAI and industry growth for Level 1 ANZSIC industries in the Great South Coast. As noted above, the CAI can be used as an indicator of possible regional strength, particularly when combined with a growing share of regional GVA. The quadrant framework can assist in mapping the growth potential of an industry with a RCA. This chart excludes Agriculture, Forestry and Fishing (which has a very high CAI) to focus the chart on the cluster of moderate CAI industries.

Top right, comparative advantage and growth: These are the industry sectors that should be looked upon as most likely to drive regional growth and development. These are sectors for which a region most likely has comparative advantage in, and which have experienced growth over the past decade. Government policy should seek to *facilitate* growth in these sectors and attempt to leverage them by focussing on the economic linkages these sectors have to the region and the Victorian economy. Industries in the Great South Coast which appear to have comparative advantage and potential growth characteristics include Agriculture, Forestry and Fishing and Health Care and Social Assistance.

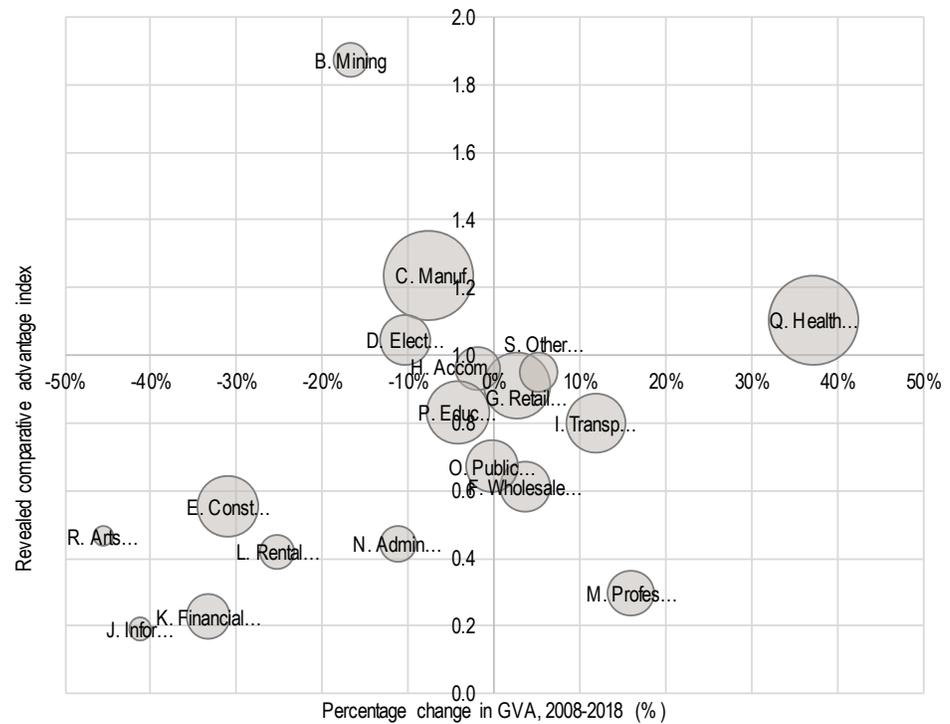
Top Left, comparative advantage with no growth: These are the industry sectors which have a comparative advantage but have been in decline over the past decade. For the Great South Coast, these sectors include the Mining and Manufacturing industries. Government policy should seek to

Identify and overcome constraints to the growth of these industries caused by infrastructure provision.

Bottom right, growth but not yet comparative advantage: These are the industry sectors in the region that have experienced growth over the past decade but do not have comparative advantage. Our analysis shows that for Great South Coast, these include the Professional, Scientific and Technical Services and Transport, Postal and Warehousing industries. Government policy should look at this quadrant as identifying *potential emerging industries*.

Bottom left, no growth and no comparative advantage: These are the industry sectors for which there are no comparative advantage or growth – namely, the Information Media and Telecommunications; Financial and Insurance Services and Construction industries. Government policy might be warranted here to *manage decline* or assist regions to transition out of these industries. Government support for these industries may have less to do with infrastructure provision and other forms (i.e. welfare) of industry support or structural adjustment.

FIGURE 2.1 REVEALED COMPARATIVE ADVANTAGE INDEX – GREAT SOUTH COAST 2017-18, LEVEL 1 ANZSIC



Note: This includes the revealed comparative advantage index of Great South Coast relative to the Victorian economy. This chart excludes Agriculture, Forestry and Fishing (which has a very high CAI) to focus the chart on the cluster of moderate CAI industries.

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.1 summarises the highest RCA industries (Level 1 ANZSIC) for the Great South Coast. The revealed industries in the table relate to those which have the highest CAI using the Victorian comparison, not the national comparison. The Victorian comparisons have been selected because they are consistent with the regional focus of this study, and because there were some limitations in the ANZSIC data which meant there would have been gaps in the presentation of high-ranking national CAI industries in some LGAs.

TABLE 2.1 TOP 10 REVEALED COMPARATIVE ADVANTAGE INDUSTRIES FOR GREAT SOUTH COAST, LEVEL 1 ANZSIC

Industry (Level 1 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
A. Agriculture, Forestry and Fishing	9.6	11.4	39%	33.8%	Top right
B. Mining	1.9	0.2	-17%	1.5%	Top left
C. Manufacturing	1.2	1.5	-8%	10.1%	Top left
Q. Health Care and Social Assistance	1.1	1.2	37%	10.2%	Top right
D. Electricity, Gas, Water and Waste Services	1.0	1.1	-10%	3.3%	Top left
H. Accommodation and Food Services	1.0	0.9	-2%	2.6%	Bottom left
S. Other Services	1.0	0.9	5%	1.9%	Bottom right
G. Retail Trade	0.9	1.1	3%	5.5%	Bottom right
P. Education and Training	0.8	0.9	-4%	5.0%	Bottom left
I. Transport, Postal and Warehousing	0.8	0.8	12%	4.6%	Bottom right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.3 Great South Coast LGA analysis (Level 2 ANZSIC analysis)

The following section includes revealed comparative advantage analysis by Level 2 ANZSIC industries for Great South Coast's five LGAs: Corangamite, Glenelg, Moyne, Southern Grampians and Warrnambool.

The analysis focuses on identifying the key Level 2 ANZSIC industries which fall in the 'top right' and are found to have a likely comparative advantage and growth.

2.3.1 Corangamite

Figure 2.2 shows RCA analysis by ANZSIC Level 2 industries for the Corangamite LGA. Key industries of interest with a high CAI in the Corangamite LGA include Fishing, Hunting and Trapping; Agriculture; Agriculture, Forestry and Fishing Support Services; Oil and Gas Extraction; Non-Metallic Mineral Mining and Quarrying; and Food Product Manufacturing (see Table 2.2).

FIGURE 2.2 COMPARATIVE ADVANTAGE INDEX FOR CORANGAMITE, 2017-18, LEVEL 2 ANZSIC



Note: This includes the revealed comparative advantage relative to the Victorian economy.

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.2 summarises the highest comparative advantage industries (Level 2 ANZSIC) for the Corangamite LGA, using the Victorian CAI comparison. Important industries include Agriculture; Agriculture, Forestry and Fishing Support Services; Oil and Gas Extraction and Food Product Manufacturing which each have large CAI, have undergone notable growth over the past 10 years and constitute a relatively large proportion of the LGA's GVA. While Fishing, Hunting and Trapping has seen enormous growth over the past 10 years and has a high CAI, it accounts for a small proportion of Corangamite's GVA.

TABLE 2.2 TOP 10 REVEALED COMPARATIVE ADVANTAGE INDUSTRIES FOR CORANGAMITE

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
4. Fishing, Hunting and Trapping	16.9	7.4	515%	0.8%	Top right
1. Agriculture	15.0	18.7	18%	46.9%	Top right
5. Agriculture, Forestry and Fishing Support Services	14.5	12.7	73%	3.2%	Top right
7. Oil and Gas Extraction	12.2	2.1	22%	4.5%	Top right
9. Non-Metallic Mineral Mining and Quarrying	4.8	1.1	-58%	0.2%	Top left
11. Food Product Manufacturing	3.8	4.9	47%	8.5%	Top right
40. Fuel Retailing	1.8	1.6	5%	0.4%	Top right
46. Road Transport	1.4	1.2	-7%	2.5%	Top left
94. Repair and Maintenance	1.4	0.9	18%	1.1%	Top right

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
44. Accommodation	1.3	0.8	1%	0.6%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.3 summarises the largest industries (Level 2 ANZSIC) for the Corangamite LGA.

TABLE 2.3 TOP 10 LARGEST INDUSTRIES FOR CORANGAMITE

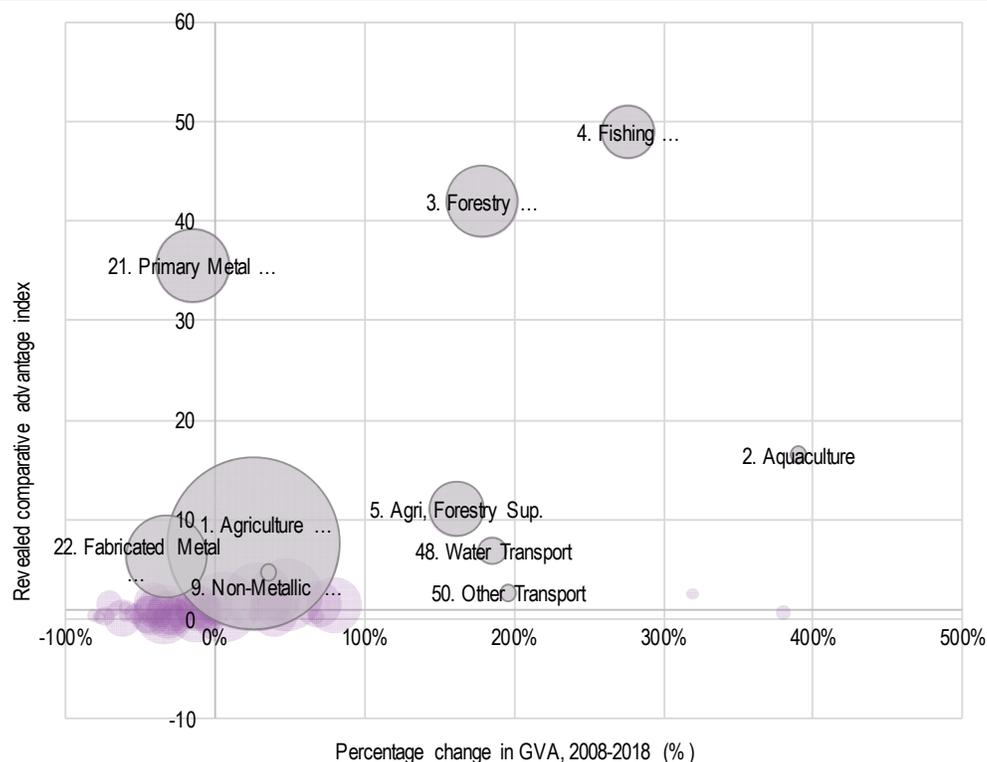
Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
1. Agriculture	15.0	18.7	18%	46.9%	Top right
11. Food Product Manufacturing	3.8	4.9	47%	8.5%	Top right
7. Oil and Gas Extraction	12.2	2.1	22%	4.5%	Top right
5. Agriculture, Forestry and Fishing Support Services	14.5	12.7	73%	3.2%	Top right
46. Road Transport	1.4	1.2	-7%	2.5%	Top left
32. Construction Services	0.5	0.4	-50%	2.5%	Bottom left
84. Hospitals	0.7	2.5	-4%	2.3%	Bottom left
69. Professional, Scientific and Technical Services	0.3	0.2	26%	1.6%	Bottom right
45. Food and Beverage Services	0.6	0.5	2%	1.3%	Bottom right
41. Food Retailing	0.9	0.6	-24%	1.2%	Bottom left

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.3.2 Glenelg

Figure 2.3 shows RCA analysis by ANZSIC level 2 industries for the Glenelg LGA. Key industries of interest with a high CAI in the Glenelg LGA include Fishing, Hunting and Trapping; Forestry and Logging; Primary Metal and Metal Product Manufacturing; Aquaculture; and Agriculture, Forestry and Fishing Support Services (see Table 2.4).

FIGURE 2.3 COMPARATIVE ADVANTAGE INDEX FOR GLENELG, 2017-18, LEVEL 2 ANZSIC



Note: This includes the revealed comparative advantage relative to the Victorian economy.

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.4 summarises the highest comparative advantage industries (Level 2 ANZSIC) for the Glenelg LGA, using the Victorian CAI comparison. Important industries include Fishing, Hunting and Trapping; Forestry and Logging; Forestry and Fishing Support Services; and Agriculture which each have large CAI, have undergone notable growth over the past 10 years and constitute a relatively large proportion of the LGA's GVA.

Primary Metal and Metal Product Manufacturing has a high CAI and is a large proportion of Glenelg's GVA. However, this industry has had negative growth over the past 10 years. Aquaculture has a high CAI and has seen very large growth but remains a small percentage of the LGA's GVA.

TABLE 2.4 TOP 10 REVEALED COMPARATIVE ADVANTAGE INDUSTRIES FOR GLENELG

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
4. Fishing, Hunting and Trapping	49.0	21.6	276%	2.4%	Top right
3. Forestry and Logging	42.0	23.2	179%	4.2%	Top right
21. Primary Metal and Metal Product Manufacturing	35.6	6.3	-15%	4.5%	Top left
2. Aquaculture	16.5	5.8	390%	0.3%	Top right
5. Agriculture, Forestry and Fishing Support Services	11.1	9.8	161%	2.5%	Top right
1. Agriculture	7.6	9.5	26%	23.7%	Top right
48. Water Transport	6.9	6.5	186%	0.7%	Top right

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
22. Fabricated Metal Product Manufacturing	6.3	6.4	-32%	5.4%	Top left
9. Non-Metallic Mineral Mining and Quarrying	4.8	1.1	36%	0.2%	Top right
50. Other Transport	2.7	0.8	196%	0.3%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.5 summarises the largest industries (Level 2 ANZSIC) for the Glenelg LGA.

TABLE 2.5 TOP 10 LARGEST INDUSTRIES FOR GLENELG

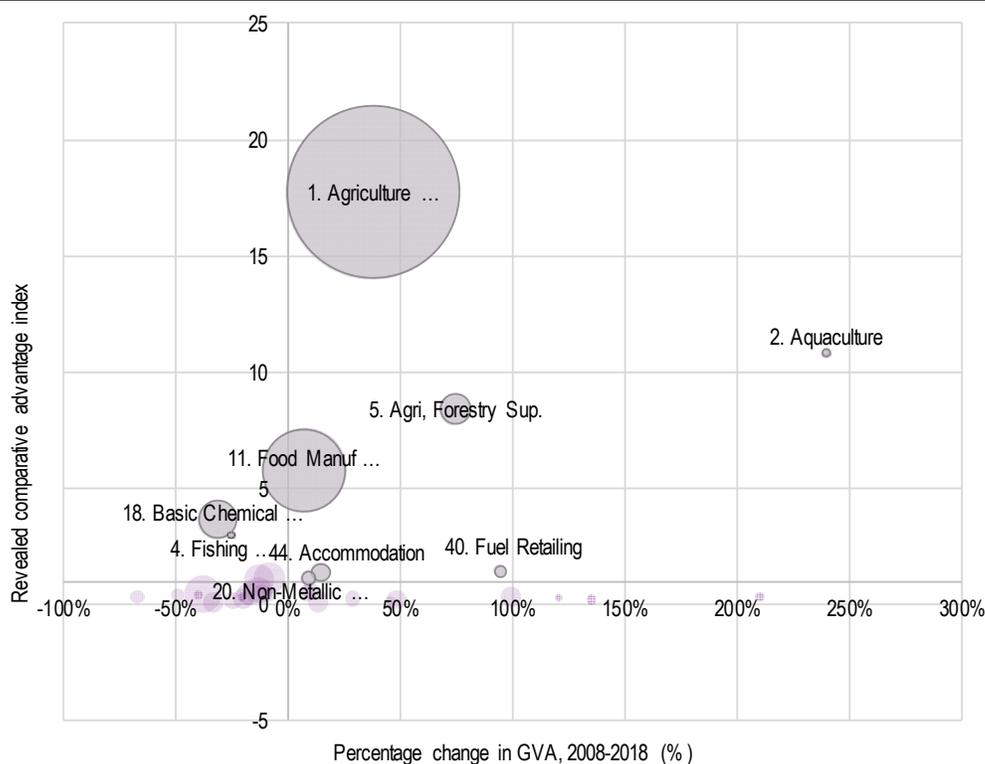
Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
1. Agriculture	7.6	9.5	26%	23.7%	Top right
22. Fabricated Metal Product Manufacturing	6.3	6.4	-32%	5.4%	Top left
21. Primary Metal and Metal Product Manufacturing	35.6	6.3	-15%	4.5%	Top left
46. Road Transport	2.5	2.1	48%	4.3%	Top right
3. Forestry and Logging	42.0	23.2	179%	4.2%	Top right
84. Hospitals	1.3	4.4	6%	4.1%	Top right
52. Transport Support Services	2.3	2.1	29%	3.8%	Top right
32. Construction Services	0.6	0.5	-34%	2.9%	Bottom left
86. Residential Care Services	1.5	1.8	80%	2.5%	Top right
5. Agriculture, Forestry and Fishing Support Services	11.1	9.8	161%	2.5%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.3.3 Moyne

Figure 2.4 shows revealed comparative advantage analysis by Level 2 ANZSIC industries for the Moyne LGA, using the Victorian CAI comparison. Key industries of interest with a high CAI in the Moyne LGA include Agriculture; Aquaculture; Agriculture, Forestry and Fishing Support Services; Forestry and Logging; and Food Product Manufacturing (See Table 2.6).

FIGURE 2.4 COMPARATIVE ADVANTAGE INDEX FOR MOYNE, 2017-18, LEVEL 2 ANZSIC



Note: This chart excludes Forestry and Logging to focus the chart on the cluster of moderate CAI industries. This includes the revealed comparative advantage relative to the Victorian economy.

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.6 summarises the highest comparative advantage industries (Level 2 ANZSIC) for Moyne LGA. Important industries include Agriculture; Agriculture, Forestry and Fishing Support Services; and Food Product Manufacturing – all of which have a relatively large CAI, form a sizeable part of the economy and have seen growth over the past 10 years. Aquaculture has a high CAI and has seen very large growth but remains a small percentage of the LGA's GVA.

TABLE 2.6 TOP 10 REVEALED COMPARATIVE ADVANTAGE INDUSTRIES FOR MOYNE

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
1. Agriculture	17.7	22.1	38%	55.4%	Top right
2. Aquaculture	10.8	3.8	240%	0.2%	Top right
5. Agriculture, Forestry and Fishing Support Services	8.4	7.4	75%	1.9%	Top right
3. Forestry and Logging	6.1	3.3	757%	0.6%	Top right
11. Food Product Manufacturing	5.8	7.4	7%	12.8%	Top right
18. Basic Chemical and Chemical Product Manufacturing	3.7	3.9	-31%	2.8%	Top left
4. Fishing, Hunting and Trapping	3.0	1.3	-25%	0.1%	Top left
40. Fuel Retailing	1.5	1.3	95%	0.3%	Top right
44. Accommodation	1.4	0.9	15%	0.7%	Top right

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
20. Non-Metallic Mineral Product Manufacturing	1.1	0.8	9%	0.5%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.7 summarises the largest industries (Level 2 ANZSIC) for the Moyne LGA.

TABLE 2.7 TOP 10 LARGEST INDUSTRIES FOR MOYNE

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
1. Agriculture	17.7	22.1	38%	55.4%	Top right
11. Food Product Manufacturing	5.8	7.4	7%	12.8%	Top right
18. Basic Chemical and Chemical Product Manufacturing	3.7	3.9	-31%	2.8%	Top left
32. Construction Services	0.5	0.4	-38%	2.3%	Bottom left
86. Residential Care Services	1.1	1.3	-8%	1.9%	Top left
5. Agriculture, Forestry and Fishing Support Services	8.4	7.4	75%	1.9%	Top right
46. Road Transport	1.0	0.8	-13%	1.8%	Top left
30. Building Construction	0.6	0.6	-13%	1.4%	Bottom left
45. Food and Beverage Services	0.4	0.3	-17%	1.0%	Bottom left
42. Other Store-Based Retailing	0.2	0.3	-20%	0.8%	Bottom left

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.3.4 Southern Grampians

Figure 2.5 shows revealed comparative advantage analysis by Level 2 ANZSIC industries for the Southern Grampians LGA, using the Victorian CAI comparison. Key industries of interest with a high CAI in the Southern Grampians LGA include Forestry and Logging; Agriculture, Forestry and Fishing Support Services; Agriculture; Metal Ore Mining; and Commission-Based Wholesaling (see Table 2.8).

FIGURE 2.5 COMPARATIVE ADVANTAGE INDEX FOR SOUTHERN GRAMPIANS, 2017-18, LEVEL 2 ANZSIC



Note: This includes the revealed comparative advantage relative to the Victorian economy.

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.8 summarises the highest comparative advantage industries (Level 2 ANZSIC) for the Southern Grampians LGA. Important industries include Forestry and Logging; Agriculture, Forestry and Fishing Support Services; Agriculture; Basic Material Wholesaling and Other Store-Based Retailing – each of which have a large CAI, undergone notable growth over the past 10 years and constitute a relatively large proportion of the LGA's GVA. Fishing, Hunting and Trapping has a high CAI and has seen very large growth but remains a small percentage of the LGA's GVA.

TABLE 2.8 TOP 10 REVEALED COMPARATIVE ADVANTAGE INDUSTRIES FOR SOUTHERN GRAMPIANS

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
3. Forestry and Logging	17.9	10.0	74%	1.8%	Top right
5. Agriculture, Forestry and Fishing Support Services	14.3	12.8	54%	3.2%	Top right
1. Agriculture	10.6	13.4	40%	33.1%	Top right
8. Metal Ore Mining	9.9	0.1	-69%	0.3%	Top left
38. Commission-Based Wholesaling	6.6	3.7	-23%	0.8%	Top left
10. Exploration and Other Mining Support Services	3.4	0.6	-86%	0.2%	Top left
33. Basic Material Wholesaling	3.0	2.8	187%	3.1%	Top right
4. Fishing, Hunting and Trapping	2.6	1.2	248%	0.1%	Top right

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
42. Other Store-Based Retailing	1.7	1.9	114%	6.0%	Top right
7. Oil and Gas Extraction	1.6	0.3	47%	0.6%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.9 summarises the largest industries (Level 2 ANZSIC) for the Southern Grampians LGA.

TABLE 2.9 TOP 10 LARGEST INDUSTRIES FOR SOUTHERN GRAMPIANS

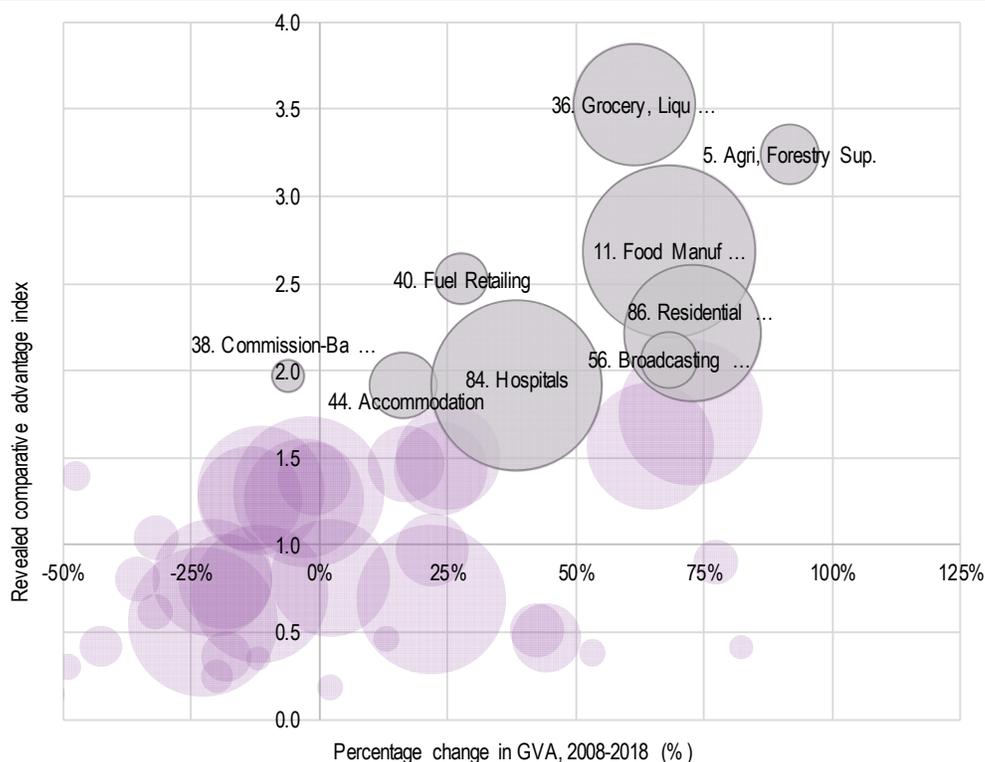
Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
1. Agriculture	10.6	13.4	40%	33.1%	Top right
42. Other Store-Based Retailing	1.7	1.9	114%	6.0%	Top right
84. Hospitals	1.6	5.4	4%	4.9%	Top right
5. Agriculture, Forestry and Fishing Support Services	14.3	12.8	54%	3.2%	Top right
33. Basic Material Wholesaling	3.0	2.8	187%	3.1%	Top right
69. Professional, Scientific and Technical Services	0.4	0.4	7%	2.8%	Bottom right
85. Medical and Other Health Care Services	1.0	0.7	35%	2.4%	Top right
45. Food and Beverage Services	1.0	0.8	22%	2.3%	Top right
86. Residential Care Services	1.3	1.6	71%	2.3%	Top right
32. Construction Services	0.4	0.4	-30%	2.2%	Bottom left

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.3.5 Warrnambool

Figure 2.5 shows revealed comparative advantage analysis by Level 2 ANZSIC industries for the Warrnambool LGA, using the Victorian CAI comparison. Key industries of interest with a high CAI in the Warrnambool LGA include Fishing, Hunting and Trapping; Grocery, Liquor and Tobacco Product Wholesaling; Agriculture, Forestry and Fishing Support Services; Food Product Manufacturing and Fuel Retailing (see Table 2.10).

FIGURE 2.6 COMPARATIVE ADVANTAGE INDEX FOR WARRNAMBOOL, 2017-18, LEVEL 2 ANZSIC



Note: This includes the revealed comparative advantage relative to the Victorian economy. The chart excludes Fishing, Hunting and Trapping to focus the chart on the key industries.

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.10 summarises the highest comparative advantage industries (Level 2 ANZSIC) for the Warrnambool LGA. Important industries include Fishing, Hunting and Trapping; Grocery, Liquor and Tobacco Product Wholesaling; Food Product Manufacturing; and Residential Care Services – each of which have a large CAI, undergone notable growth over the past 10 years and constitute a relatively large proportion of the LGA's GVA.

Agriculture, Forestry and Fishing Support Services; Fuel Retailing; and Broadcasting (except Internet) each have a high CAI and have seen very large growth but remain a small percentage of the LGA's GVA.

TABLE 2.10 TOP 10 REVEALED COMPARATIVE ADVANTAGE INDUSTRIES FOR WARRNAMBOOL

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10-year growth	% of LGA GVA	Quadrant
4. Fishing, Hunting and Trapping	25.8	11.9	1,680%	1.3%	Top right
36. Grocery, Liquor and Tobacco Product Wholesaling	3.5	4.1	61%	3.0%	Top right
5. Agriculture, Forestry and Fishing Support Services	3.2	3.0	92%	0.7%	Top right
11. Food Product Manufacturing	2.7	3.6	68%	6.0%	Top right
40. Fuel Retailing	2.5	2.4	28%	0.6%	Top right
86. Residential Care Services	2.2	2.8	73%	3.8%	Top right
56. Broadcasting (except Internet)	2.1	1.9	68%	0.7%	Top right

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10-year growth	% of LGA GVA	Quadrant
38. Commission-Based Wholesaling	2.0	1.1	-6%	0.2%	Top left
44. Accommodation	1.9	1.3	16%	0.9%	Top right
84. Hospitals	1.9	6.7	38%	5.9%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

Table 2.11 summarises the largest industries (Level 2 ANZSIC) for the Warrnambool LGA.

TABLE 2.11 TOP 10 LARGEST INDUSTRIES FOR WARRNAMBOOL

Industry (Level 2 ANZSIC)	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
11. Food Product Manufacturing	2.7	3.6	68%	6.0%	Top right
84. Hospitals	1.9	6.7	38%	5.9%	Top right
42. Other Store-Based Retailing	1.3	1.5	-2%	4.6%	Top left
62. Finance	0.6	-	-23%	4.5%	Bottom left
69. Professional, Scientific and Technical Services	0.7	0.6	22%	4.5%	Bottom right
85. Medical and Other Health Care Services	1.8	1.2	72%	4.1%	Top right
86. Residential Care Services	2.2	2.8	73%	3.8%	Top right
32. Construction Services	0.7	0.7	-12%	3.7%	Bottom left
81. Tertiary Education	1.3	7.2	-11%	3.3%	Top left
1. Agriculture	1.0	1.4	175%	3.2%	Top right

SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.4 Summary (Level 2 ANZSIC analysis)

Table 2.12 summarises the highest revealed comparative advantage industries (Level 2 ANZSIC) for the LGAs within the Great South Coast.

The economic performance of the Great South Coast is highly dependent on the primary production industries, particularly dairy milk, sheep and lamb and beef production.³ This is evident in the strong comparative advantage of agriculture in the rural LGAs of the region: Moyne (17.7 Victorian comparison), Corangamite (15 Victorian comparison), Southern Grampians (10.6 Victorian comparison) and Glenelg (7.6 Victorian comparison). Unsurprisingly, for all rural LGAs, the agriculture sector represents between 23-55 per cent of their individual LGA gross value add and have all grown by 18-40 per cent in the last decade. These results demonstrate that the region's economic performance is highly concentrated in primary industries, with growth prospects dependent on favourable seasonal conditions and international commodity markets. These risks need to be considered when assessing future investment opportunities.

Agriculture, Forestry and Fisheries Support Services also demonstrate strong comparative advantage and growth across the four rural LGAs. Although typically representing 2-3 per cent GVA across the four rural LGAs, this sector complements the primary production industry and will continue to become more important into the future as farm businesses become larger, require more technology and higher input levels.

Along the coast, wild catch and commercial fishing (Glenelg and Warrnambool LGAs) and aquaculture (Glenelg and Moyne LGAs) sectors are well established. Although they are smaller contributors to

³ ABARES (2019) Victoria regional profile: Warrnambool and South West Region. Accessed 23 May 2019 (<http://www.agriculture.gov.au/abares/research-topics/aboutmyregion/vic-warrnambool>)

gross value add than agriculture, these sectors have strong comparative advantage indices and the most significant growth of all sectors in the past decade for their respective LGAs (e.g. Glenelg LGA (276 per cent) and Warrnambool LGA (1,680 per cent)). These growth figures likely reflect the growing international demand for Australian fresh and frozen seafood products, particularly into Asia.

Of the non-agricultural sectors demonstrating strong comparative advantages, Primary Metal and Product Manufacturing (Glenelg LGA) and Fabricated Metal Product Manufacturing (Glenelg LGA) which both represent 4-5 per cent of GVA have declined significantly in the past decade. This highlights the challenges for non-agricultural secondary industries in rural areas to develop and grow alongside food and fibre manufacturing sectors.

TABLE 2.12 TOP 20 HIGHEST REVEALED COMPARATIVE ADVANTAGE BY LGA, GREAT SOUTH COAST

Industry (Level 2 ANZSIC)	LGA	CAI (Victorian comparison)	CAI (National comparison)	10-year growth	% of LGA GVA	Quadrant
4. Fishing, Hunting and Trapping (appears: 2 times)*	Glenelg (S)**	49.0	21.6	276%	2.4%	Top right
3. Forestry and Logging (appears: 2 times)	Glenelg (S)	42.0	23.2	179%	4.2%	Top right
21. Primary Metal and Metal Product Manufacturing	Glenelg (S)	35.6	6.3	-15%	4.5%	Top left
4. Fishing, Hunting and Trapping (appears: 2 times)	Warrnambool (C)	25.8	11.9	1,680%	1.3%	Top right
3. Forestry and Logging (appears: 2 times)	Southern Grampians (S)	17.9	10.0	74%	1.8%	Top right
1. Agriculture (appears: 4 times)	Moyne (S)	17.7	22.1	38%	55.4%	Top right
2. Aquaculture (appears: 2 times)	Glenelg (S)	16.5	5.8	390%	0.3%	Top right
1. Agriculture (appears: 4 times)	Corangamite (S)	15.0	18.7	18%	46.9%	Top right
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Corangamite (S)	14.5	12.7	73%	3.2%	Top right
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Southern Grampians (S)	14.3	12.8	54%	3.2%	Top right
7. Oil and Gas Extraction	Corangamite (S)	12.2	2.1	22%	4.5%	Top right
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Glenelg (S)	11.1	9.8	161%	2.5%	Top right
2. Aquaculture (appears: 2 times)	Moyne (S)	10.8	3.8	240%	0.2%	Top right
1. Agriculture (appears: 4 times)	Southern Grampians (S)	10.6	13.4	40%	33.1%	Top right
8. Metal Ore Mining	Southern Grampians (S)	9.9	0.1	-69%	0.3%	Top left
5. Agriculture, Forestry and Fishing Support Services (appears: 4 times)	Moyne (S)	8.4	7.4	75%	1.9%	Top right
1. Agriculture (appears: 4 times)	Glenelg (S)	7.6	9.5	26%	23.7%	Top right
48. Water Transport	Glenelg (S)	6.9	6.5	186%	0.7%	Top right
38. Commission-Based Wholesaling	Southern Grampians (S)	6.6	3.7	-23%	0.8%	Top left
22. Fabricated Metal Product Manufacturing	Glenelg (S)	6.3	6.4	-32%	5.4%	Top left

Note: *Revealed industries that appear in more than one LGA are identified "appears: x times". ** LGAs are classified as follows: (C) Cities, (S) Shires, (RC) Rural Cities.

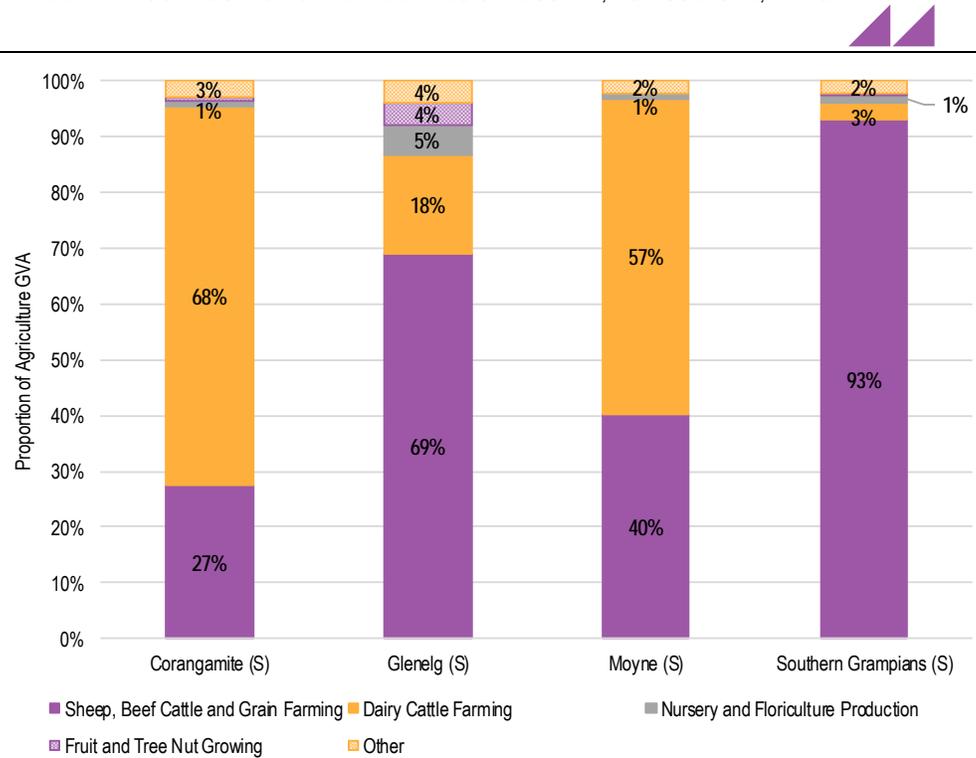
SOURCE: ACIL ALLEN ESTIMATES BASED ON IV DATA

2.4.1 Agricultural production by sector

The Level 2 ANZSIC industry, Agriculture, forms a large component of GVA for many of the LGAs within the Great South Coast. Figure 2.7 shows the estimated GVA of each of the sub industries which form Agriculture.

Agriculture in the Great South Coast is primarily Sheep, Beef Cattle and Grain; and Dairy cattle Farming. Sheep, Beef Cattle and Grain Farming comprise a large component of agriculture across all four LGAs included in Figure 2.7, and Dairy Cattle Farming accounts for a large proportion of agriculture in Corangamite, Glenelg and Moyne.

FIGURE 2.7 COMPOSITION OF LEVEL 2 ANZSIC INDUSTRY, AGRICULTURE, BY LGA



Note: Other includes: Mushroom and Vegetable Growing; Poultry Farming; Other Crop Growing; and Deer Farming. LGAs are classified as follows: (C) Cities, (S) Shires and (RC) Rural Cities.

SOURCE: ACIL ALLEN CONSULTING SHARES OF EMPLOYMENT BY INDUSTRY



This section outlines the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis and need assessment processes undertaken by ACIL Allen for the Great South Coast. The analysis follows the process outlined in the assessment framework report which accompanies this profile. A SWOT examines the RCA industries identified in Chapter 2. The justification for inclusion of specific revealed industries in the SWOT is based on assessment of several factors.

Firstly, revealed industries identified in Table 2.12 are assessed for their RCA comparison to Victoria, the contribution to an LGA's GVA and consideration of the past decade's performance. This approach identifies the most important industries to the region. This guides the initial SWOT analysis process. However, due to some of the limitations of the RCA (see Section 2.1), it is important to review available industry, sector and regional development literature as well as consult with relevant regional stakeholders to identify industries that the region considers as important for future economic development. In the Great South Coast's case, opportunities have been identified in Agriculture, Forestry and Fisheries, Energy and Mining and Tourism.

Due to the categorisation of industries in the ANZSIC codes tourism does not have a demonstrated RCA. Data simply will not allow for this calculation to be undertaken. However, this sector demonstrates many economic development opportunities for the region. A further assessment of the priority industries considers service industries that may contribute to the performance of a primary or secondary industry – for Tourism, this may include Accommodation and Retail Trade.

In order to include industries that could be considered emerging or have demonstrated growth but are starting from a low base, it is necessary to cross-check the opportunities identified in the literature with the emerging industries presented in Table 2.12. Outside of Agriculture, Manufacturing and Tourism (Accommodation), there are no industries in the top 20 that are identified in the literature that either align with the small industries (<1% GVA) demonstrating high RCA or have demonstrated strong growth over the past decade. This may reflect the limitations of the revealed industry categorisation at the ANZSIC code 2-digit level, which presents a high-level industry descriptor.

The SWOT analysis is then used to identify actionable or practical issues which are compared against the documented infrastructure needs of the region/industries. This comparison is then used to identify potential opportunities and constraints facing industries which could be addressed through future infrastructure investments.

3.1 SWOT analysis of the region and revealed industries

A summary of the SWOT for the economic sectors for the Great South Coast is provided in Table 3.1. Information for the SWOT has been derived from multiple sources (which are largely publicly available) including data held by IV, regional plans, industry and sectoral strategies, and consultations.

TABLE 3.1 SWOT ANALYSIS FOR THE REVEALED INDUSTRIES OF THE GREAT SOUTH COAST

Industry	Strengths	Weaknesses	Opportunities	Threats
Cross Industry	<ul style="list-style-type: none"> Warrnambool (with 34% of the region's population) is the largest centre Established transport corridors support goods and service flows between agricultural and forestry production areas, townships and ports of Portland, Geelong and Melbourne Key transport infrastructure is centred on the Princes Highway, Hamilton Highway and the South Western rail line that connects Melbourne to Warrnambool The Port of Portland is a deep-water bulk port located between Melbourne and Adelaide. It supports international trade in bulk commodities, inc. agricultural, forestry and mining products 	<ul style="list-style-type: none"> Mobile and digital connectivity is inadequate and constrains productivity and business competitiveness Higher levels of disadvantage in Warrnambool and rural towns compared Vic averages. Access to public transport and internet is particularly low in Corangamite, Glenelg, Moyne and Southern Grampians LGA¹ The region's urban water supply is facing the challenges of increasing uncertainty and reduced availability of water resources, which present issues in supplying urban water over a wide distribution network that is sourced from highly variable sources. While larger regional towns are currently well serviced, smaller systems have and will require augmentation to secure water supply Portland – Maroona rail line does not have the same axle loading as the Maroona to Geelong line, limiting Port of Portland's competitiveness; ARTC managed rail lines to the Port of Portland i.e. Maroona Rail Line and connection from South Australia via Dartmoor are not to a level to be a viable option for freight movements Road network not meeting size and scale of freight task Workforce shortages across key industries such as agriculture and forestry 	<ul style="list-style-type: none"> Improve digital connectivity through the Connecting Regional Communities Program and Mobile Blackspots Program The Port of Portland is an asset of national significance and retains great potential for expansion and growth Further leverage Warrnambool – Changchun Economic Development Demonstration Project Improve transport connections between <ul style="list-style-type: none"> The region and Geelong & Ballarat. Create linkages between Camperdown and Colac. Towns in north east have connections with the Central Highlands and Greater Geelong regions. In the west, improve connections with Horsham and Mt Gambier Facilitate delivery and uptake of NBN Victoria's Climate Change Act 2017 establishes a long-term target of net zero greenhouse gas emissions by 2050, creating opportunities for low/zero emission sectors across the economy Increase capacity of local electricity distribution system to overcome current constraints on investment Increase utilisation of broad-gauge west coast rail (freight and passenger services connecting to Melbourne) and the Portland line Opportunities to upgrade Portland – Maroona line to have the same axle loading as the Maroona to Geelong line Opportunities with the Geelong City Deal GSC's growing agriculture and manufacturing sectors will place increasing importance on freight New road and rail connections and road and rail upgrades will enhance connectivity and the movement of people and goods 	<ul style="list-style-type: none"> Climate change impacts (extreme weather events, drought, fire, flood, coastal erosion, inundation) Lack of drought-proof water infrastructure Cessation of Vic Govt and Alcoa agreement in 2021 Cessation of commercial flights between Melbourne and SW (Warrnambool & Portland) Roads not rehabilitated to a standard that handles the freight volume and frequency
Agriculture, Forestry and Fisheries	<ul style="list-style-type: none"> Significant landscapes including wetlands, coastal and marine assets, lakes, plains, volcanic cones Natural resources including. native timber, fisheries, wind resources, natural gas, coal, sand and stone resources Agriculture is dominant land-use and economic driver and employer Recreational fishing in lakes, estuaries and rivers and open water <p>Glenelg</p> <ul style="list-style-type: none"> Forestry and timber processing industries are important and growing, historically soft wood, more recently developed for blue gum (hardwood) Commercial fishing and aquaculture significant on coast <p>Corangamite</p>	<ul style="list-style-type: none"> Mobile and digital connectivity is inadequate and constrains productivity and business competitiveness The region has a greater distance from key export points (i.e. Port of Melbourne) for dairy, beef and lamb 	<ul style="list-style-type: none"> Opportunities associated with the implementation of the Great South Coast Food and Fibre Action Plan Opportunities to develop local aquaculture industry, to do so appropriate land zoning is necessary for production and processing <p>Forestry and logging</p> <ul style="list-style-type: none"> Increased demand for skilled labour in forestry and logging sector as new blue gum plantations are chipped and logged in future Opportunities around improving capacity of Port of Portland which is the largest blue gum woodchip port in Australia and has reached peak capacity Opportunities for haulage requirements due to increased logging of forestry plantations (transport infrastructure) <p>Grains and broadacre</p> <ul style="list-style-type: none"> Access to Portland (freight advantage to other Vic regions) 	<ul style="list-style-type: none"> Biosecurity threats (abalone disease outbreak for example) Biosecurity risks associated with climate change: changed distribution of pests and diseases Climate change impacts could increase length of droughts, increase impact from floods, increase number of days of extreme heat and fire danger, coastal inundation and erosion Climate change impact on forestry: declining log yield due to bushfires and reduced rainfall Reduction in water security as

Industry	Strengths	Weaknesses	Opportunities	Threats
	<ul style="list-style-type: none"> - Dairy milk production is the main industry in South. Increasing livestock and grains industries in the North 			<ul style="list-style-type: none"> - a potential climate change impact - Lack of drought proof water infrastructure - Water scarcity decreasing surface water run off - Competition from international markets such as New Zealand with efficient supply chains (Dairy) - Rising energy costs (dairy production) - Competition for agricultural land, particularly in the corridor from Warrnambool to Portland
Mining and energy	<ul style="list-style-type: none"> - Region is a hub for alternative energy production, geothermal, natural gas, wave and wind energy projects <p>Moyne and Glenelg</p> <ul style="list-style-type: none"> - Renewable energy investment potential - Strong wind resource in southern area of shire - Moderate solar irradiance particularly to North, in proximity to transmission lines - Presence of geothermal bore holes, in south and central shire, which could be explored further - Presence of transmission lines including the 66kV and 500 kV Alcoa lines is attractive for large scale energy project investment 	<ul style="list-style-type: none"> - Renewable energy cost competitiveness with traditional sources of energy such as coal fired power 	<ul style="list-style-type: none"> - Victoria's Climate Change Act 2017 establishes a long-term target of net zero greenhouse gas emissions by 2050. This increases viability of renewable energy investments into the future. - Release of new planning guidelines for large-scale solar farms - Renewable energy expected to be cheaper than traditional energy sources in the near future - New investment in energy sector likely to continue over the coming decades i.e. hydrogen production - Abundance of energy assets inc. natural gas, wind, geothermal, marine energy technologies which could be leveraged - Maximising potential benefits of energy production, including local use and component manufacturing while managing the impacts on amenity, roads and environment - Sourcing local sand, stone and mineral resources, including identification, protection and extraction approval 	<ul style="list-style-type: none"> - Land use competition with agriculture - Changes in Government energy policies e.g. onshore gas moratorium, hydrogen production
Tourism (services including accommodation)	<ul style="list-style-type: none"> - Tourism assets such as Great Ocean Road, Grampians national park, Budj Bim National Heritage Landscape (recently announced as a World Heritage Site) , Tower Hill, South West Walk, Cape Bridgewater Kanawinka Geopark, Port Fairy - Nature-based tourism including fishing, bush walking and surfing 	<ul style="list-style-type: none"> - Ageing arts and cultural infrastructure in the region - Low visitor attendance of western region for farm or wineries visits <p>Corangamite</p> <ul style="list-style-type: none"> - Concentrated seasonal visits impact the environment, create crowding and poor visitor experience - High proportion of day visitation is impacting on the yield in the region's economy. - Difficulty attracting and retaining workers in tourism sector - Housing access and affordability, particularly for tourism workers - Key highways of insufficient capacity/quality to move large number of tourists/visitors from Melbourne to 	<ul style="list-style-type: none"> - New investment anticipated in Tourism industry - Opportunities from the development of cultural tourism infrastructure within the UNESCO World Heritage listed Budj Bim cultural landscape and the implementation of the Budj Bim master plan, given expected increase in domestic and international tourism due to World Heritage listing - Opportunities associated with transformative visitor economy projects to increase product and length of stay such as infrastructure investment within the 12 Apostles precinct and implementation of the Shipwreck Coast Master Plan Stage 2. - Further develop road access to key tourism routes such as Great Southern Touring Route and Great Ocean Road, these provide linkage to other regions including Wimmera Southern Mallee, Central Highlands, Greater Geelong and through to Melbourne. In particular, opportunities to leverage the Great Ocean Road Strategic Master Plan for a visitor economy - Maintain and upgrading road and rail networks and transport services to provide private vehicles, freight and public transport to meet needs of residents and 	<ul style="list-style-type: none"> - Climate change will impact some regional assets, particularly erosion of coastal roads, coastal properties, public parks and reserves - Local resistance to tourism development in coastal towns

Industry	Strengths	Weaknesses	Opportunities	Threats
		coastal regions – High increase in water demand in these towns during tourist seasons is a key challenge to water security – Accommodation offering not meeting demand impacting on the length of stay in the region.	visitors – Maintaining and upgrading tourism infrastructure along Great Ocean Rd – Avalon Airport expansion of its domestic and international operations and its curfew-free status will drive the business and tourism sectors – Establishment of the Great Ocean Road Parks Authority	

SOURCE: VARIOUS SOURCES

MCKINNA ET AL (2015) FOOD AND FIBRE STRATEGY AND ACTION PLAN

([HTTPS://WWW.WARRNAMBOOL.VIC.GOV.AU/SITES/WARRNAMBOOL.VIC.GOV.AU/FILES/DOCUMENTS/BUSINESS/REGION_TOURISM/GREAT%20SOUTH%20COAST%20FOOD%20AND%20FIBRE%20STRATEGY%202020.PDF](https://www.warrnambool.vic.gov.au/sites/warrnambool.vic.gov.au/files/documents/business/region_tourism/great%20south%20coast%20food%20and%20fibre%20strategy%202020.pdf))

CORANGAMITE SHIRE ECONOMIC DEVELOPMENT STRATEGY 2017-21 ([HTTPS://WWW.CORANGAMITE.VIC.GOV.AU/BUSINESS/ECONOMIC-DEVELOPMENT-INVESTMENT](https://www.corangamite.vic.gov.au/business/economic-development-investment))

DEPARTMENT OF TRANSPORT, PLANNING AND LOCAL INFRASTRUCTURE (2014) GREAT SOUTH COASTAL GROWTH PLAN: BACKGROUND REPORT ([HTTPS://WWW.PLANNING.VIC.GOV.AU/POLICY-AND-STRATEGY/REGIONAL-GROWTH-PLANS/GREAT-SOUTH-COAST-REGIONAL-GROWTH-PLAN](https://www.planning.vic.gov.au/policy-and-strategy/regional-growth-plans/great-south-coast-regional-growth-plan))

GEOGRAFIA AND ENGAGE 2 (2016) DIGITAL STRATEGY FOR GLENELG SHIRE COUNCIL AND SOUTHERN GRAMPPIANS SHIRE COUNCIL

([HTTP://WWW.STHGRAMPPIANS.VIC.GOV.AU/FILES/PUBLIC_DOCUMENTS/PUBLICDOCUMENTSSOUTHERN_GRAMPPIANS_AND_GLENELG_DIGITAL_STRATEGY_2016.PDF](http://www.sthgrampians.vic.gov.au/files/public_documents/publicdocumentssouthern_grampians_and_glenelg_digital_strategy_2016.pdf))

VICTORIAN GOVERNMENT (2014) GREAT SOUTH COASTAL GROWTH PLAN ([HTTPS://WWW.PLANNING.VIC.GOV.AU/POLICY-AND-STRATEGY/REGIONAL-GROWTH-PLANS/GREAT-SOUTH-COAST-REGIONAL-GROWTH-PLAN](https://www.planning.vic.gov.au/policy-and-strategy/regional-growth-plans/great-south-coast-regional-growth-plan))

WARRANAMBOOL SHIRE ECONOMIC DEVELOPMENT AND INVESTMENT STRATEGY 2020 ([HTTPS://WWW.WARRNAMBOOL.VIC.GOV.AU/ECONOMIC-DEVELOPMENT-INVESTMENT-STRATEGY](https://www.warrnambool.vic.gov.au/economic-development-investment-strategy))

VICTORIAN GOVERNMENT, [HTTPS://WWW.CLIMATECHANGE.VIC.GOV.AU/_DATA/ASSETS/PDF_FILE/0033/392919/D18-001.REGCCASNAPSHOTREPORTS_BSW_FALR.PDF](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0033/392919/D18-001.REGCCASNAPSHOTREPORTS_BSW_FALR.PDF)

VICTORIAN GOVERNMENT, [HTTPS://WWW.CLIMATECHANGE.VIC.GOV.AU/REDUCING-EMISSIONS/EMISSIONS-TARGETS](https://www.climatechange.vic.gov.au/reducing-emissions/emissions-targets)

VICTORIAN GOVERNMENT, REGIONAL ADAPTATION SNAPSHOT – BARWON SOUTH WEST: [HTTPS://WWW.CLIMATECHANGE.VIC.GOV.AU/_DATA/ASSETS/PDF_FILE/0033/392919/D18-001.REGCCASNAPSHOTREPORTS_BSW_FALR.PDF](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0033/392919/D18-001.REGCCASNAPSHOTREPORTS_BSW_FALR.PDF)

VARIOUS OTHER SOURCES INCLUDING: ([HTTPS://WEB1.ECONOMICDEVELOPMENT.VIC.GOV.AU/ECODEVIC/CONNECTING-VICTORIA/CONNECTING-REGIONAL-COMMUNITIES-PROGRAM](https://web1.economicdevelopment.vic.gov.au/code/vic/connecting-victoria/connecting-regional-communities-program)); ([HTTPS://WWW.RDV.VIC.GOV.AU/_DATA/ASSETS/PDF_FILE/0009/1733247/GSC-OUTCOMES-ROADMAP_MARCH-2019.PDF](https://www.rdv.vic.gov.au/_data/assets/pdf_file/0009/1733247/GSC-OUTCOMES-ROADMAP_MARCH-2019.PDF)); ([HTTPS://WWW.ABC.NET.AU/NEWS/2019-07-06/INDIGENOUS-SITE-JOINS-PYRAMIDS-STONEHENGE-WORLD-HERITAGE-LIST/11271804](https://www.abc.net.au/news/2019-07-06/indigenous-site-joins-pyramids-stonehenge-world-heritage-list/11271804)); ([HTTPS://WWW.PREMIER.VIC.GOV.AU/NEW-LARGE-SCALE-SOLAR-GUIDELINES-BOOST-SECTOR-CONFIDENCE/](https://www.premier.vic.gov.au/new-large-scale-solar-guidelines-boost-sector-confidence/)); ([HTTPS://WWW.TANDFONLINE.COM/DOI/ABS/10.1080/09669580408667225](https://www.tandfonline.com/doi/abs/10.1080/09669580408667225)); ([HTTPS://WWW.ENVIRONMENT.GOV.AU/HERITAGE/ABOUTWORLD-HERITAGE/IMPLICATIONS-WORLD-HERITAGE-LISTING](https://www.environment.gov.au/heritage/aboutworld-heritage/implications-world-heritage-listing)).

To ensure the SWOT can be translated into actionable strategies, ACIL Allen has used a technique which applies four fundamental questions to the information provided above. These questions are derived from combining elements of the SWOT. They help to identify the region's 'opportunities' and 'constraints' that could be progressed/addressed through future infrastructure investment.

3.1.1 Strengths – Opportunities assessment

This part of the SWOT considers: Which of the region's/sector's strengths can be used to maximise the opportunities identified?

Agriculture, Forestry and Fisheries is the largest industry representing 34 per cent of the Great South Coast's GVA and has experienced 39 per cent sectoral growth in the past decade, which is the largest for all industries. Dairy production, rock lobsters, abalone, beef and grains are the primary contributors to the sectoral growth. Global demand for protein, particularly high quality and high value products such as beef, milk and processed products presents a great opportunity for the Great South Coast to maximise the benefits from its agricultural industries which exhibit comparative advantages. This is evident for Corangamite, Glenelg, Moyne, Southern Grampians and Warrnambool LGAs.

Upgrading and improving road and rail freight networks which link the region with Melbourne and other major regional centres will reduce the freight costs for agricultural inputs and produce which are key drivers of profitability for dairy, grains, beef and commercial fishing businesses.

Access to reliable airport infrastructure may further enhance the supply chain access for rock lobster producers into overseas live produce markets.

Through the *Climate Change Act 2017*, the Victorian Government has set a long-term target of net zero emissions by 2050. This is a key opportunity for the renewable energy sector across the state.⁴

3.1.2 Strengths – Threats assessment

This part of the SWOT considers: How can the region's/sector's strengths be used to minimise the threats identified?

The Great South Coast is an important dairy producing and processing region of Victoria and Australia. This is demonstrated in the high comparative advantage of the agriculture, forestry and fisheries sector which experienced 39 per cent growth over the last decade.

In the future, the agriculture sector is exposed to the potential impacts of climate change, which are expected to increase air temperature, reduce rainfall and increase incidence and extremity of weather events including drought. The more rural LGAs in the region including Corangamite, Glenelg, Moyne and Southern Grampians have even greater exposure than the regional centre of Warrnambool, which has a more diverse local economy.

The expected impact of climate change on these sectors will include increased variability in milk supply, which will increase variability in processed milk production. Typically, to overcome the exposure to such climatic conditions, further support for R&D and innovation is needed which enables producers to reduce the cost of production of milk that is traded into commodity milk markets or produce higher value products requiring lower milk volumes to stay profitable. This strategy is also relevant for managing the incidence of depressed international milk prices in the long-term.

This approach for utilising the strengths of the dairy industry to minimise climatic and market threats is transferrable for the smaller agriculture sectors including grains, beef, sheep and wool.

It is not immediately clear what the specific infrastructure implications are for government arising from this analysis, outside of ensuring that the dairy industry has effective transport (road and rail) networks to ensure perishable goods can reach market in a timely way and that the industries are well served by digital networks.

⁴ <https://www.climatechange.vic.gov.au/reducing-emissions/emissions-targets>

3.1.3 Weaknesses – Opportunities assessment

This part of the SWOT considers: How can the region's/sector's weaknesses be minimised by using the opportunities identified?

The continued workforce transition of primary industries (agriculture, forestry and fisheries, mining and resource extraction) and secondary industries (manufacturing) towards technologically advanced and capital intense industries reflects the progress and growth of such sectors. However, as a result the number of unskilled and low skilled workers employed in these sectors is in decline.

Opportunities for these workers exist either in smaller but growing sectors such as fishing, hunting and trapping (rock lobster and fishing), which alongside aquaculture present significant opportunities in the long-run and where the region has high comparative advantages. These industries have significant export potential and require effective supply chain connectivity between producers, processes and air freight facilities to get products to market on time, and ultimately become a greater source of regional employment.

3.1.4 Weaknesses – Threats assessment

This part of the SWOT considers: How can a region's/sector's weaknesses be minimised to avoid the threats it/they are facing?

The Great South Coast's primary and secondary industries are exposed in the long run to threats of climate change and international market volatility. This is evident in agriculture (dairy, grains, beef, sheep and wool), mining (gas extraction) and manufacturing (milk, primary metal and metal product manufacturing sectors).

Although, the Great South Coast's agricultural sectors are the largest industries, have significant comparative advantage and have experienced growth in recent years, these sectors' performance is generally cyclical in nature, due to seasonality of production and exposure to international markets, where Australia exhibits no market power.

This fundamental weakness which affects a high proportion of sectors (above) across the Corangamite, Glenelg, Moyne, Southern Grampians and Warrnambool LGAs, can be off set via economic diversification into less climate or commodity market dependent sectors.

For the Great South Coast this may require infrastructure investment to support its growing tourism industries, which complement more service intense sectors such as accommodation and wholesaling/retailing (grocery, liquor and tobacco product wholesaling, fuel retailing, accommodation) that have comparative advantages.

The changing consumer preference towards low carbon/ sustainably produced goods as well as the Victorian Government's target of net zero emissions by 2050 should be considered. For industries to manage the risk that changing consumer preferences present as well as to respond to the net zero emissions target by 2050, there is potential for investment in more efficient plant and equipment and to utilise renewable energy sources to bolster the sustainability credentials and manage operating expenditure price risks.

3.2 Needs analysis of the region and revealed industries

This section identifies the needs for industry sectors and at Level 2 ANZSIC for the Great South Coast and within the Corangamite, Glenelg, Moyne, Southern Grampians and Warrnambool LGAs. These needs have been developed based on the SWOT analytical processes outlined in the assessment framework report.

3.2.1 What is important to the Great South Coast?

Agriculture, Forestry and Fisheries

The agriculture, forestry and fisheries industries are the largest source of comparative advantage, GVA and source of growth for the region in the last decade. Dairy milk, lamb, wool, beef and grain

production are the main production sectors for the region. Future growth of these sectors can depend on either productivity gains on-farm or developing existing or new markets to capture greater value.

The following sectors and LGAs have comparative advantages and have experienced sectoral growth in the past decade:

- Agriculture (Corangamite LGA, Glenelg LGA, Moyne LGA and Southern Grampians LGA)
- Fishing, Hunting and Trapping (Glenelg LGA and Warrnambool LGA)
- Forestry and Logging (Glenelg LGA and Southern Grampians LGA)
- Aquaculture (Glenelg LGA and Moyne LGA).

During the same period manufacturing industries with comparative advantages have contracted in value:

- Primary Metal and Product Manufacturing (Glenelg LGA)
- Fabricated Metal Product Manufacturing (Glenelg LGA).

What needs could be addressed by government?

The dairy, livestock and grains sectors benefit from efficient connections to the large Melbourne market and potentially Avalon airport for freight access to Asian markets. Although the region has optimal access to bulk commodity port of Portland, the region needs to continue to develop higher value markets which require road and air freight supply routes linking the Great South Coast to Adelaide, Melbourne, Ballarat and Avalon Airport.

Additionally, there is evidence to suggest the importance of digital connectivity for farm businesses in the region for future productivity gains, particularly in the dairy, grains and livestock sectors would be beneficial.

For Fishing, Hunting and Trapping and Aquaculture sectors, further development of fisheries resources, total allowable catch regimes, training and transitioning of workers into primary roles is essential to creating larger more sustainable sectors. They will also benefit from enhanced local air freight to access fresh seafood markets in South East Asia.

Tourism

The industries' with comparative advantages that are relevant to the tourism sector include Accommodation and Wholesaling/ Retailing (Grocery, Liquor and Tobacco Product Wholesaling and Fuel Retailing).

Although tourism is not as clearly defined in the data which makes assessment challenging, the region has strengths that can be exploited through further development of tourism opportunities. There is potential to develop agritourism experiences based around the local dairy and livestock industries. These experiences are more common in the Yarra Valley, Mornington Peninsula and Central Highlands regions; however, with significant visitor populations travelling the Great Ocean Road and visiting the Grampians National Park, improvements in accessibility for domestic and international tourists and services can develop the Great South Coast visitor economy.

The recent designation of Budj Bim Cultural Landscape as a World Heritage Site highlights the region's comparative advantage on indigenous tourism not just in Victoria but across Australia, since Budj Bim is the only Australian World Heritage Site listed primarily for its Aboriginal cultural importance.

What needs could be addressed by government?

The government can facilitate development of nature-based tourism experiences in the rural and coastal areas of the region including the Great Ocean Road and the accommodation facilities/services and amenities that complement the region's tourism offerings more generally. This includes maintenance and upgrading of road and rail passenger transport routes, development of public amenities at nature-based tourism sites such as National Parks and facilitation of development of accommodation, food and beverage services (through the provision of enabling infrastructure which makes these areas attractive places to establish or do business) and digital connectivity.

While the Victorian government is already progressing with Stage 1 Projects of the Shipwreck Coast Master Plan, there are still approximately 67 projects in the Master Plan that need to be implemented. Stage 1 projects include the Twelve Apostles Improvement Program, Twelve Apostles Telecommunications, WIFI and Digital Interpretation Platform, Saddle Lookout, Blowhole Lookout, Port Campbell Creek Pedestrian Bridge and Trail Connectivity.⁵

The recent announcement of Budj Bim as a World Heritage site highlights the need for continued investment on tourism infrastructure in anticipation of increased interest on the site.

Mining and Energy

Through the *Climate Change Act 2017*, the Victorian Government has set a long-term target of net zero emissions by 2050. This is a key opportunity for the renewable energy sector across the state.⁶

The Great South Coast has substantial renewable energy resources including wind and geothermal and natural gas resources. If developed, these industries would provide significant opportunities in supporting professional services, technical services, transport and subsidiary manufacturing industries (a specific example being the opportunity for associated gas transport and logistics, including helicopter operations at Warrnambool Regional Airport to create linkage to gas fields).

What needs could be addressed by government?

For gas resources and renewable industries to develop, access to water and power utilities and potential transmission networks would be essential. Road and rail access to sites is also essential.

3.2.2 What investment opportunities and constraints does government face in addressing these needs?

Table 3.2 summarises the opportunities and constraints government could consider in addressing the infrastructure needs of the revealed industries of the Great South Coast which have a high comparative advantage.

TABLE 3.2 WHAT ARE THE INFRASTRUCTURE INVESTMENT OPPORTUNITIES AND CONSTRAINTS FOR GREAT SOUTH COAST?

Industry	Revealed sectors	Relevant LGAs	Identified needs	Opportunities to address needs	Constraints to economic development of the sector
Agriculture, Forestry and Fisheries	Agriculture (Dairy, lambs and wool and beef)	Corangamite Glenelg Moynes Southern Grampians	Improved accessibility of rail and road freight access for primary industries with processors and Melbourne	Develop road, rail freight infrastructure that links primary industries with domestic and international markets	Inadequate road and rail freight connection limits investment in local processing, manufacturing and domestic markets
	Agriculture (Dairy, lambs and wool and beef)	Corangamite Glenelg Moynes Southern Grampians	Improved access to broadband internet on-farm	Increased deployment of mobile and NBN telecommunication infrastructure	Inadequate access to internet on-farm reduces farm businesses capacity to adopt and apply technology that increases productivity and profitability

⁵ See: <https://www.shipwreckcoast.vic.gov.au/shipwreck-coast-master-plan-stage-1-projects>

⁶ <https://www.climatechange.vic.gov.au/reducing-emissions/emissions-targets>

Industry	Revealed sectors	Relevant LGAs	Identified needs	Opportunities to address needs	Constraints to economic development of the sector
	Forestry and wood products	Glenelg Southern Grampians	Increased haulage requirements of roads that link forestry and wood product to wood product manufacturers	Non infrastructure related opportunities identified as the region's primary opportunities (e.g. review haulage regulations between forestry and wood product and wood product manufacturer corridors)	Non infrastructure related constraints identified as the region's primary constraints (e.g. regulatory barriers such as haulage requirements for road freight can reduce forestry and wood product supply chain efficiency)
		Glenelg Southern Grampians	Optimal road freight supply chain linking Blue Gum plantations and the Port of Portland. This relates to work being undertaken on the Green Triangle Freight Routes	Potential to increase blue gum wood chip exports through better transport infrastructure to and from Port of Portland	
	Fishing, hunting and trapping (wild catch southern rock lobster and abalone)	Glenelg Warmambool	Improved road and rail freight access for wild catch and commercial fishing industries	Develop road and rail infrastructure that links wild catch and commercial fishing sectors with domestic and international markets	Inadequate road and rail freight access between wild catch and live seafood markets in Asia. The closest air freight access point is Avalon
	Aquaculture	Glenelg Moynes	Improved road freight access for wild catch and commercial farming industries	Develop road infrastructure that links wild catch and commercial farming sectors with domestic and international markets	Inadequate road freight access between wild catch and live seafood markets in Asia.

Industry	Revealed sectors	Relevant LGAs	Identified needs	Opportunities to address needs	Constraints to economic development of the sector
Tourism	Accommodation and services sectors (Identified as emerging industry, based on the future opportunities identified in the SWOT however, it does not have a RCA as such)	Warrnambool Glenelg Southern Grampians Corangamite Moynes	Improved facilities at nature-based tourism sites will increase demand	Encourage investment in service provision and recreational facilities/amenities in nature-based tourism locations	Domestic and International tourists are less inclined to visit tourist destinations that are less accessible and do not provide a full experience (services) and accommodation options
			Progress with other enabling infrastructure / tourism infrastructure projects identified in the Shipwreck Coast Master Plan	Encourage the development of accommodation options for and around these locations	
			Progress with other enabling infrastructure needed for the World Heritage listed Budj Bim Cultural Landscape, particularly road infrastructure	Improving access to Budj Bim Cultural Landscape to encourage further visitation and cope with expected increase in visitation due to World Heritage listing	
			Maintenance of Great Ocean Road	Safety improvements/ coastal protection infrastructure along Great Ocean Road	Coastal erosion will impact Great Ocean Road and its attractiveness as a key tourism destination
			Domestic and international tourists expect access to internet when visiting regional Victoria	Increase investment in telecommunication infrastructure and facilities at strategic nature-based tourism locations	Domestic and International tourists are less inclined to visit tourist destinations that do not provide a full experience (services) and digital connectivity
Mining and Energy	Gas mining	Warrnambool Moynes Corangamite	Gas field development requires access to transmission and basic utilities	Opportunity for associated gas transport and logistics, including helicopter operations at Warrnambool Regional Airport create linkage to gas fields	

Notes: <https://www.abc.net.au/news/2017-05-21/sand-used-to-halt-beach-erosion-rise-along-great-ocean-road/8543552>

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