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## East Gippsland Data Report

REMPPLAN

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For

Dench McClean Carlson

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**This project has been conducted by the  
~ Economic Research Unit La Trobe University Bendigo ~**

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August 2006

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*All figures and data presented in this document are based on data sourced from the Australia Bureau of Statistics (ABS) and other government agencies, most of which relates to the 2001 Census. Using ABS datasets, the regional economic modelling software REMPLAN, developed at La Trobe University, Bendigo has been applied to generate industrial economic data estimates. This document is provided in good faith with every effort made to provide accurate data and apply comprehensive knowledge. However, La Trobe University does not guarantee the accuracy of data nor the conclusions drawn from this information. A decision to pursue any suggestions mentioned in the report is wholly the responsibility of the party concerned. La Trobe University advises any party to conduct detailed feasibility studies and seek professional advice before proceeding with any action and accepts no responsibility for the consequences of pursuing any of the findings or actions discussed in the document.*

**RESOURCES**

All modelling has been undertaken using REMPLAN<sup>®</sup> software that has been authored by Principal Research Fellow (ret.), Ian Pinge, at the Economic Research Unit (ERU), La Trobe University, Bendigo.



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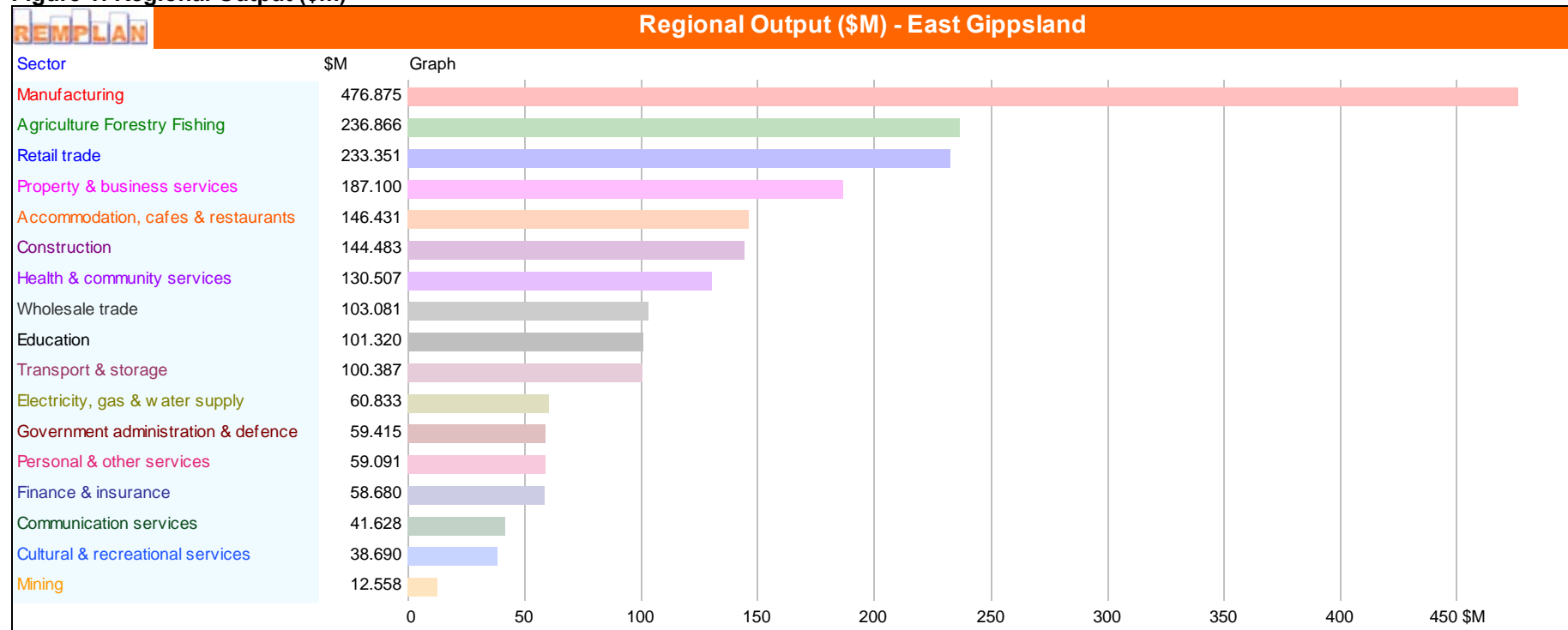
## INTRODUCTION

This document provides a quick overview of 17 industry sectors in the East Gippsland Shire. It highlights where they each of the sectors sit in the economic structure of the region.

The document also highlights the key propulsive sectors and examines some of these sectors at a 35 industry sector level.

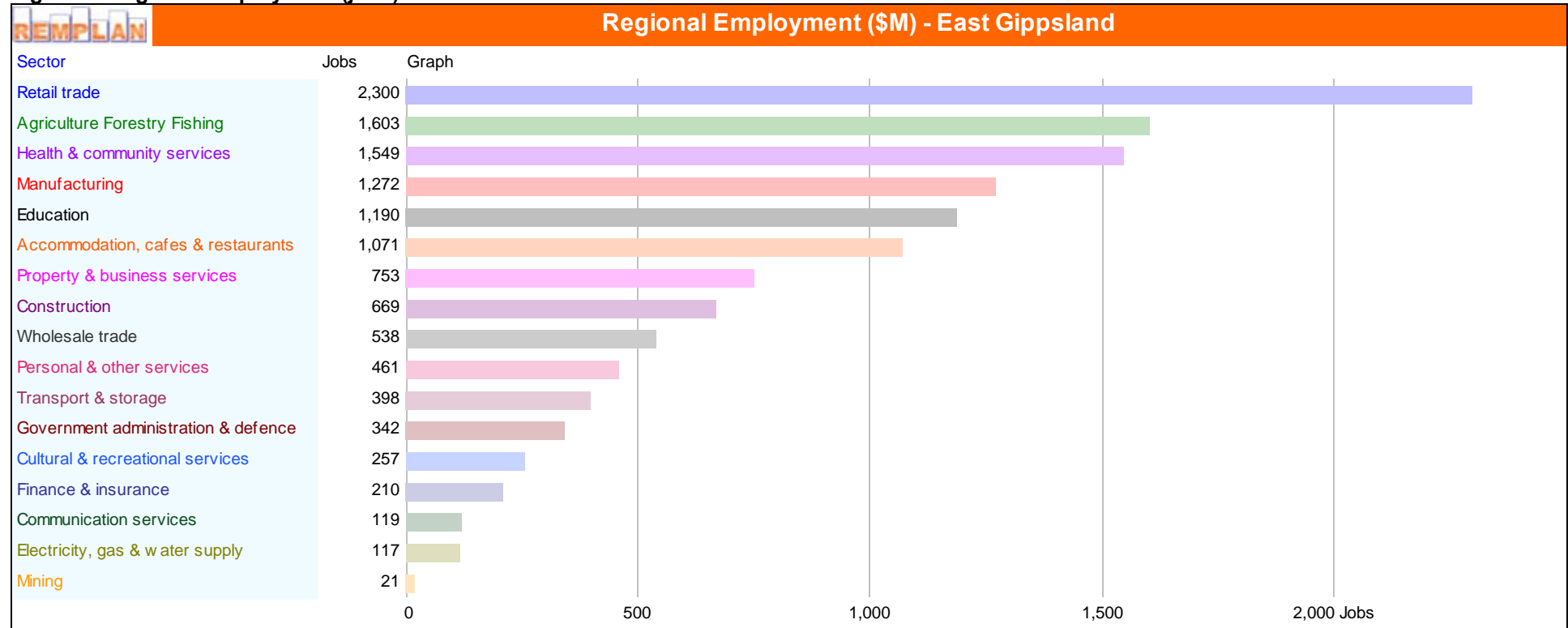
## EAST GIPPSLAND ECONOMIC DATA

**Figure 1: Regional Output (\$m)**



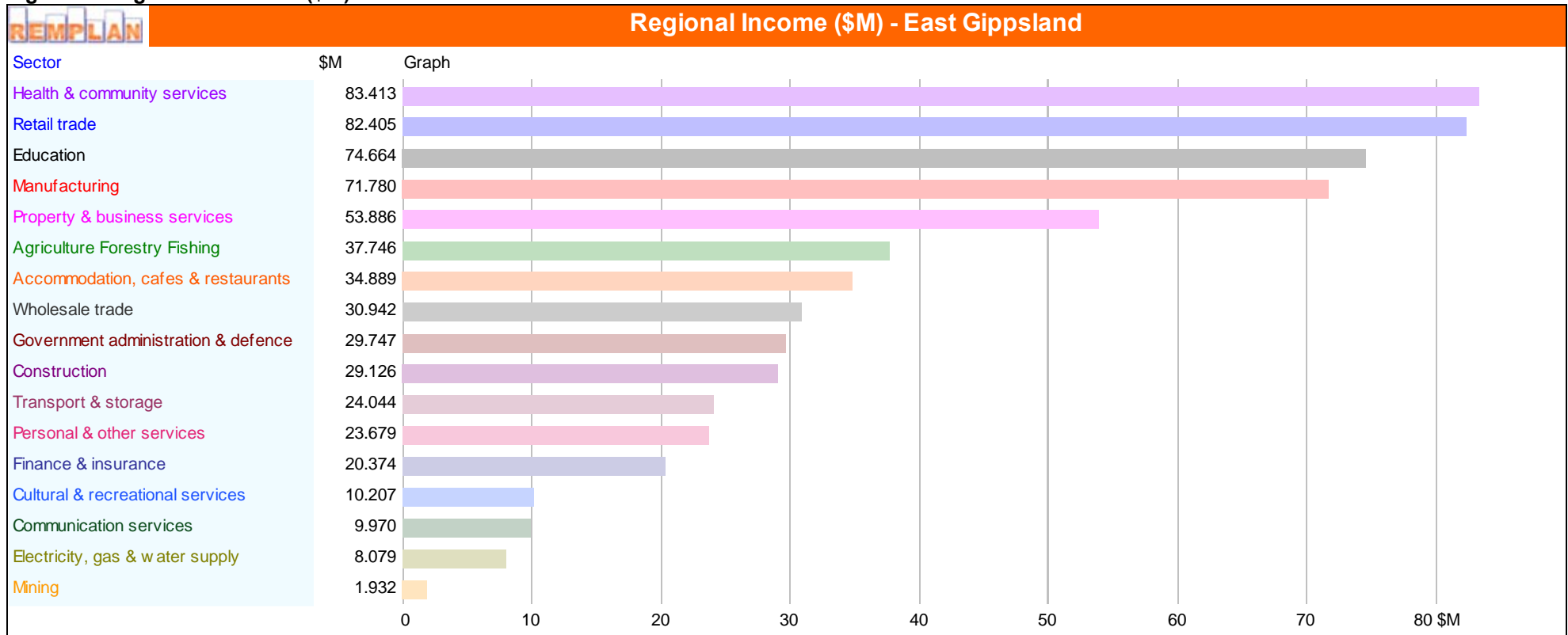
- Manufacturing contributes the most regional output
- Strong economic linkages between manufacturing and agriculture.
- Manufacturing and agriculture are important drivers of retail and accommodation, cafes & restaurants related activity.
- Tourism related activity also makes valuable contributions to retail and accommodation, cafes & restaurants.

Figure 2: Regional Employment (jobs)



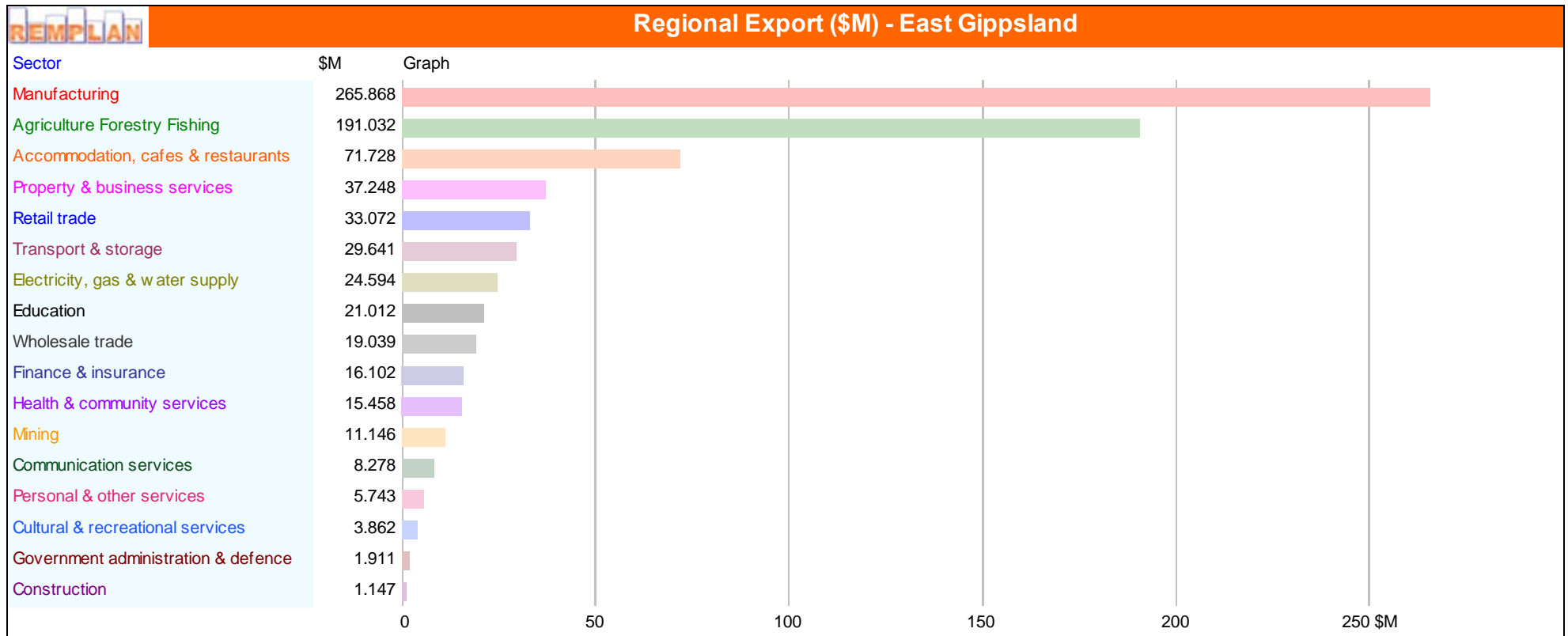
- Employment is spread across a number of industry sectors.
- The spread of employment activity reflects economic diversity and resilience to external economic shocks
- Retail trade makes the largest contribution to regional employment.
- Retail is a labour intensive sector characterised by high levels of casual and part-time employment and relatively low wage levels.

Figure 3: Wages and Salaries (\$m)



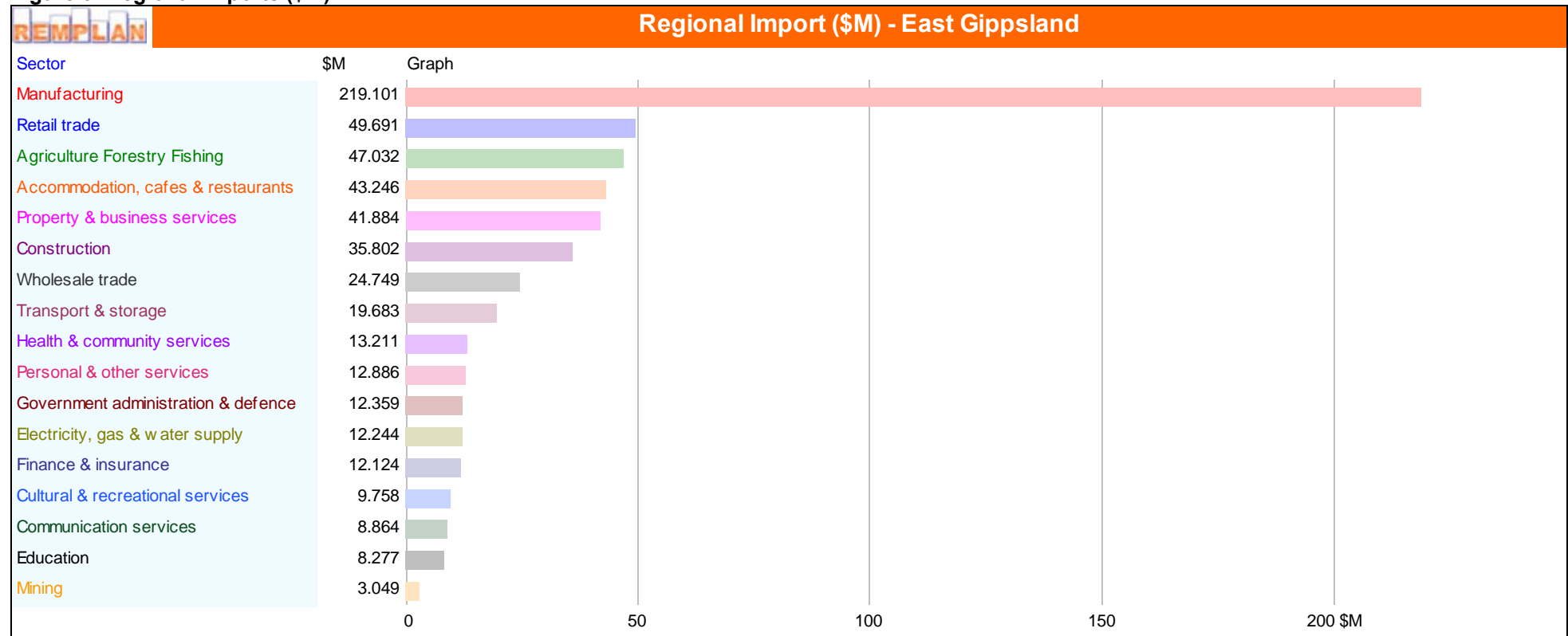
- While the retail trade sector employs more people, the health & community services sector which is characterised by full-time employment and high wages levels, makes the largest contribution to wages and salaries in the region.
- Note the high ranking of sectors such as health & community services, education, and property & business services, relative to their respective contribution to regional output.
- The sectors which contribute the most to wages and salaries are drivers of consumption activity in East Gippsland.

Figure 4: Regional Exports (\$m)



- Manufacturing and agriculture dominate regional exports.
- Exports are drivers of economic activity in that they generate new economic activity that is not as likely to be at the expense of activity in another segment of the regional economy.
- Exports provide the wealth required to sustain the importation of the goods and services required within the region.

Figure 5: Regional Imports (\$m)



- Manufacturing is clearly the most significant importer into East Gippsland of goods and services.
- Imports by the manufacturing sector in East Gippsland are estimated at \$219m per annum. Amongst these imports may exist opportunities for the replacement of imports with local production.
- Analysis of regional imports by industry sector is the starting point for a strategic approach to identifying areas of potential opportunities to grow the regional economy

**Figure 6: Value-added to Gross Regional Product (\$m)**

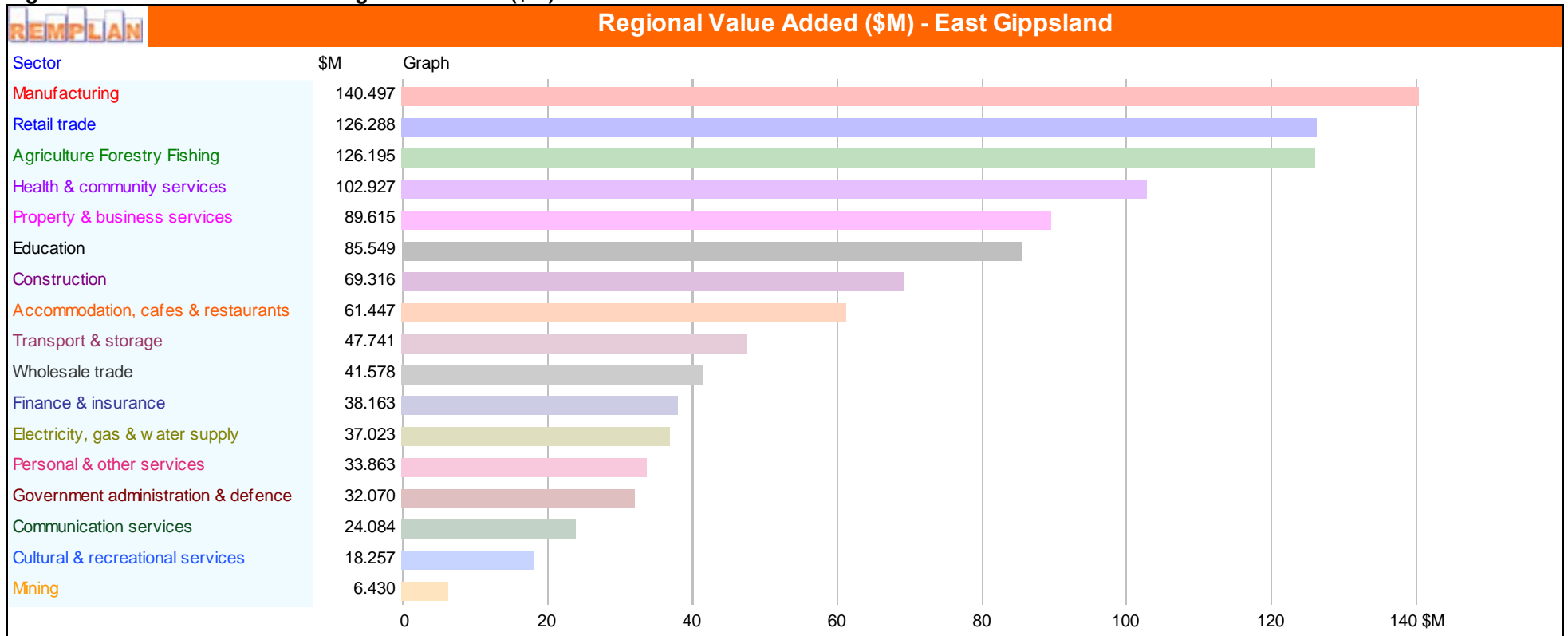


Figure 6 illustrates the estimated contributions of each industry sector in East Gippsland to the region’s Gross Regional Product (GRP). GRP is calculated in the same way as GDP and is a net measure of value-added in the region.

- GRP avoids the double counting associated with measures of output. High levels of output may only reflect the use of high value intermediated components which may have been imported into the region. In calculating GRP regional imports are subtracted as they represent leakages of wealth out of the region.
- In East Gippsland value-added to GRP is spread over many industry sectors indicating a diversified and robust regional economy.

Figure 7: Industry Summary Table, East Gippsland

REMPAN Summary Table - East Gippsland												
Sector	Output		Income		Employ't		Exports		Imports		Val. Added	
	\$M	%	\$M	%	jobs	%	\$M	%	\$M	%	\$M	%
Agriculture Forestry Fishing	236.866	10.810	37.746	6.020	1,603	12.460	191.032	25.240	47.032	8.190	126.195	11.670
Mining	12.558	0.570	1.932	0.310	21	0.160	11.146	1.470	3.049	0.530	6.430	0.590
Manufacturing	476.875	21.760	71.780	11.450	1,272	9.880	265.868	35.130	219.101	38.170	140.497	13.000
Electricity, gas & water supply	60.833	2.780	8.079	1.290	117	0.910	24.594	3.250	12.244	2.130	37.023	3.420
Construction	144.483	6.590	29.126	4.650	669	5.200	1.147	0.150	35.802	6.240	69.316	6.410
Wholesale trade	103.081	4.700	30.942	4.940	538	4.180	19.039	2.520	24.749	4.310	41.578	3.850
Retail trade	233.351	10.650	82.405	13.150	2,300	17.870	33.072	4.370	49.691	8.660	126.288	11.680
Accommodation, cafes & restaurants	146.431	6.680	34.889	5.570	1,071	8.320	71.728	9.480	43.246	7.530	61.447	5.680
Transport & storage	100.387	4.580	24.044	3.840	398	3.090	29.641	3.920	19.683	3.430	47.741	4.420
Communication services	41.628	1.900	9.970	1.590	119	0.920	8.278	1.090	8.864	1.540	24.084	2.230
Finance & insurance	58.680	2.680	20.374	3.250	210	1.630	16.102	2.130	12.124	2.110	38.163	3.530
Property & business services	187.100	8.540	53.886	8.600	753	5.850	37.248	4.920	41.884	7.300	89.615	8.290
Government administration & defence	59.415	2.710	29.747	4.750	342	2.660	1.911	0.250	12.359	2.150	32.070	2.970
Education	101.320	4.620	74.664	11.910	1,190	9.250	21.012	2.780	8.277	1.440	85.549	7.910
Health & community services	130.507	5.960	83.413	13.310	1,549	12.040	15.458	2.040	13.211	2.300	102.927	9.520
Cultural & recreational services	38.690	1.770	10.207	1.630	257	2.000	3.862	0.510	9.758	1.700	18.257	1.690
Personal & other services	59.091	2.700	23.679	3.780	461	3.580	5.743	0.760	12.886	2.250	33.863	3.130
	2,165.189	100	626.884	100	12,870	100	756.881	100	573.960	100	1,081.045	100

Figure 7 summarises all the information presented in the above graphs, it also provides specific information relating to each sectors percentage contribution to each of the economic measures.

- From this table it is possible to identify the propulsive industry sectors which are presented in Figure 10.

**Figure 8: Gross Regional Product (\$M)**

Gross Regional Product - East Gippsland			
EXPENDITURE	\$M	INCOME	\$M
Household Consumption	528.615	Wages and Salaries	626.884
Government Consumption	215.313	Gross Operating Surplus	381.170
Private Gross Fixed Capital Expenditure	196.847	Net Taxes - Production	34.733
Public Gross Fixed Capital Expenditure	<u>41.077</u>	Net Taxes - Products and Services	121.682
Gross Regional Expenses	<u>981.852</u>		
Plus Exports	768.966		
less Domestic Imports	-425.324		
less Overseas Imports	-161.025		
balancing item	0.000		
<b>Gross Regional Product</b>	<b>1,164.469</b>	<b>Gross Regional Product</b>	<b>1,164.469</b>
<b>Per Capita GRP (\$'000)</b>	<b>29.839</b>	<b>Per Capita GRP (\$'000)</b>	<b>29.839</b>

GRP is calculated in the same way as GDP and is a net measure of value-added in the region.

GRP avoids the double counting associated with measures of output. High levels of output may only reflect the use of high value intermediated components which may have been imported into the region. In calculating GRP regional imports are subtracted as they represent leakages of wealth out of the region.

Figure 6 indicated that East Gippsland had a diversified and robust regional economy due to its diversity amongst industry sectors, Figure 8 shows that East Gippsland is also a net exporter of goods and services, (Exports – Imports).

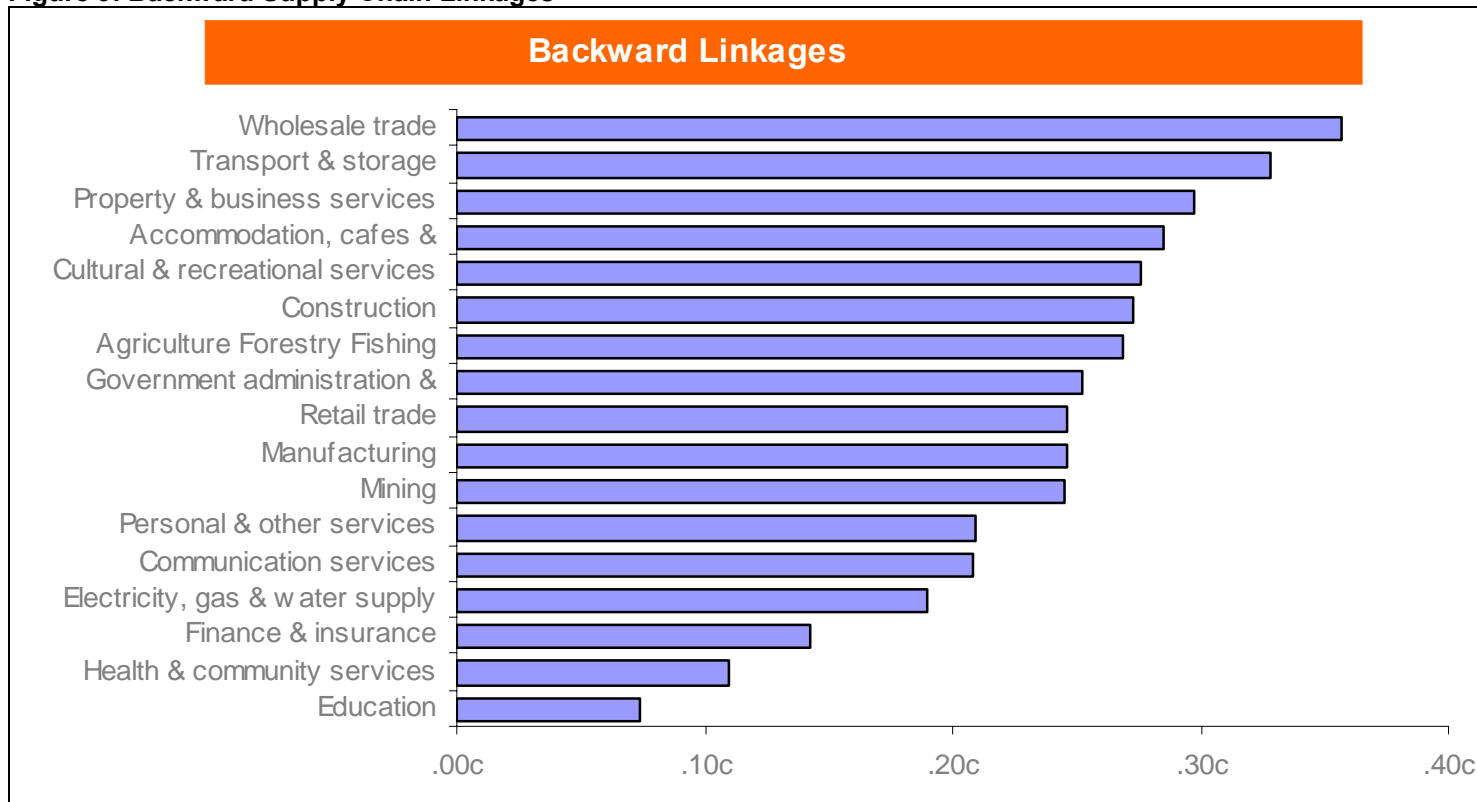
**Key Propulsive Sectors**

Figure 9 represents the degree to which industry sectors in East Gippsland interact locally, that is, for every \$1.00 of output they generate how many cents of goods and services they purchase as inputs, from other local industry sectors.

Industries with strong backward linkages have the largest potential to grow the region should they expand.

- These sectors are ranked by their percentage of local purchases NOT the total value of goods and services purchased locally.

**Figure 9: Backward Supply Chain Linkages**



**Table 1: Top 10 Local Purchases per \$1 of Output Generated**

Top 10 local purchasers per \$1 of output	cents
Meat & dairy product Manufacturing	0.4609
Pigs	0.3792
Services to agriculture; hunting & trapping	0.3791
Wholesale trade	0.3566
Dairy cattle	0.3531
Wood & wood product manufacturing	0.3301
Transport & storage	0.3284
Forestry & Fishing	0.3212
Non-metal mineral product manufacturing	0.3119
Poultry	0.2977
Property & business services	0.2972

Table 1 looks at the backward linkages shown in Figure 9 in greater detail and highlights which sectors have the most capacity to grow other industries in the region should they grow. Conversely Table 1 shows which sectors will have the largest negative impact on industries should they decline. I.e. for every one dollar of output generated by the pig industry 38 cents of inputs are purchased from within the shire.

**Table 2 Top 10 Local Purchases by Absolute Value**

Top 10 local purchases by value	\$M
Retail trade	57,372.08
Property & business services	55,600.90
Accommodation, cafes & restaurants	41,738.00
Other food & beverage product manufacturing	41,049.69
Construction	39,364.89
Wholesale trade	36,754.67
Transport & storage	32,962.15
Wood & wood product manufacturing	32,332.47
Forestry & Fishing	21,751.29
Government administration & defense	14,985.25

While the first table shows the potential capacity to affect the region, Table 2 shows the total value of local purchases. With the first table it pays to remember that if a sector only has \$10 dollars of output it may spend only \$4.60 on inputs sourced locally and thus have a minimal affect on the region. This table quantifies the actual worth of the local purchases in the region.

Figure 10 highlights which sectors have constantly ranked in the top five positions in the previous key economic indicator graphs.

**Figure 10: Key Propulsive Sectors**

Key Propulsive Sectors	Top Five Ranking				Total
	Backward Linkages	Exports	Employment	Value Added	
<b>Agriculture Forestry Fishing</b>		☑	☑	☑	3
Mining					—
<b>Manufacturing</b>		☑	☑	☑	3
Electricity, gas & water supply					—
Construction					—
Wholesale trade	☑				1
<b>Retail trade</b>		☑	☑	☑	3
Accommodation, cafes & restaurants	☑	☑			2
Transport & storage	☑				1
Communication services					—
Finance & insurance					—
<b>Property &amp; business services</b>	☑	☑		☑	3
Government administration & defense					—
Education			☑		1
Health & community services			☑	☑	2
Cultural & recreational services	☑				1
Personal & other services					—

The key propulsive sectors can be split into two groups, current drivers and potential future drivers. The current drivers are the manufacturing, agriculture and retail sectors with high values of exports, employment and value added to the region.

The potential future drivers are the property and business services sector, wholesale trade and accommodation cafes and restaurants

Table 3: Major Importing Sectors into East Gippsland

<b>IMPORTS</b>	<b>\$M</b>
Machinery & equipment manufacturing	70.133
Other food & beverage product manufacturing	61.767
Retail trade	49.691
Accommodation, cafes & restaurants	43.246
Property & business services	41.884
Construction	35.802
Wood & wood product manufacturing	29.048
Wholesale trade	24.749
Transport & storage	19.683
Metal & fabricated metal product manufacturing	17.153

While no inference can be drawn from the above import table as to the type of imports made by each of these sectors it does however give an indication as to which sectors spend a large amount on imports from outside the region. This information can be a catalyst for further local ground work to identify what is being imported by these industries. This can also be further highlighted through import gap analysis to quantify the types of goods and services imported and the value of these imports. This analysis can aid in the identification of potential areas for value adding in the region through import replacement programs.

**Figure 11: Agriculture and Manufacturing Breakdown**

REPLAN 35 sector Summary Table - East Gippsland												
Sector	Output		Income		Employt		Exports		Imports		Val. Added	
	\$M	%	\$M	%	jobs	%	\$M	%	\$M	%	\$M	%
<b>Agriculture Forestry Fishing Total</b>	236.866	10.810	37.746	6.020	1,603	12.460	191.032	25.240	47.032	8.190	126.195	11.670
- Sheep	21.472	0.990	1.629	0.260	223	1.730	20.518	2.710	3.642	0.630	11.771	1.090
- Grains	2.372	0.110	0.109	0.020	8	0.070	1.822	0.240	0.828	0.140	1.095	0.100
- Beef cattle	52.365	2.420	6.755	1.080	528	4.100	48.111	6.360	8.141	1.420	32.812	3.040
- Dairy cattle	34.494	1.590	2.765	0.440	202	1.570	32.956	4.350	6.923	1.210	15.456	1.430
- Pigs	0.926	0.040	0.185	0.030	4	0.030	0.674	0.090	0.275	0.050	0.342	0.030
- Poultry	1.696	0.080	0.307	0.050	6	0.050	1.022	0.140	0.246	0.040	0.996	0.090
- Other agriculture	46.451	2.150	7.234	1.150	263	2.040	24.459	3.230	10.184	1.770	28.875	2.670
- Services to agriculture; hunting & trapping	9.036	0.420	2.121	0.340	38	0.290	4.399	0.580	1.354	0.240	4.318	0.400
- Forestry & Fishing	67.725	3.130	16.641	2.650	330	2.560	57.072	7.540	15.440	2.690	30.531	2.820
<b>Manufacturing Total</b>	476.875	21.760	71.780	11.450	1,272	9.880	265.868	35.130	219.101	38.170	140.497	13.000
- Meat & dairy products	11.771	0.540	1.499	0.240	17	0.130	5.270	0.700	3.894	0.680	2.513	0.230
- Other food & beverage products	147.960	6.830	22.175	3.540	362	2.820	92.459	12.220	61.767	10.760	46.527	4.300
- Textiles clothing & footwear	6.602	0.300	0.891	0.140	27	0.210	3.129	0.410	4.777	0.830	1.322	0.120
- Wood & wood products	97.415	4.500	17.837	2.850	350	2.720	75.287	9.950	29.048	5.060	36.563	3.380
- Paper, printing & publishing	33.553	1.550	6.619	1.060	109	0.850	10.287	1.360	14.270	2.490	12.579	1.160
- Petroleum & coal products	8.079	0.370	0.256	0.040	4	0.030	3.362	0.440	6.708	1.170	0.981	0.090
- Chemicals, rubber & plastic products	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
- Non-metal mineral products	13.015	0.600	2.077	0.330	34	0.270	3.397	0.450	4.023	0.700	5.189	0.480
- Metal & fabricated metal products	37.712	1.740	7.626	1.220	110	0.850	17.789	2.350	17.153	2.990	12.181	1.130
- Machinery & equipment	101.388	4.680	10.272	1.640	190	1.480	51.836	6.850	70.133	12.220	18.427	1.700
- Miscellaneous manufacturing	13.818	0.640	2.527	0.400	67	0.520	3.052	0.400	7.328	1.280	4.216	0.390
<b>TOTALS FOR ALL SECTORS</b>	2,165.189	100	626.884	100	12,870	100	756.881	100	573.960	100	1,081.045	100

**SWOT Analysis**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• The spread of employment activity reflects economic diversity and resilience to external economic shocks</li> <li>• Consumption activity from wages &amp; salaries paid to a broad employment base</li> <li>• Strong regional economic linkages between manufacturing and agriculture.</li> <li>• Diversified and robust regional economy due to the contribution amongst industry sectors.</li> <li>• East Gippsland is a net exporter of goods and services</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Strong links between manufacturing and agriculture are underpinned by the timber industry</li> <li>• Geographic location; being large distance from end markets, both domestically and internationally</li> <li>• Small population spread over a wide geographic area</li> <li>• Large infrastructure overheads due again to population density</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Strengthen existing clusters to strengthen industry interactions</li> <li>• Infrastructure development to allow East Gippsland to compete globally</li> <li>• Leverage of supply and demand opportunities to mitigate against any threats</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Any major change to timber logging quota's could seriously impact the economic structure of the region</li> <li>• Exposure to transport price increases due to the distances between East Gippsland and domestic markets and international ports</li> <li>• Regulatory risks</li> </ul>