

1. Industry Classifications 2014-15

The task of analysing the RDAWEP regional economy requires a better understanding of the region's industries. More detailed and accurate data are needed about the nature of key industries and their constituent sectors. In order to enhance the description of the region's industries and economy, RDAWEP and the EPLGA commissioned EconSearch to prepare industry-based economic data from 2012-13.

The manner in which the region's industries are described is critical to economic analyses. This paper:

- Describes the prevailing conventions for classifying industries,
- Identifies the industry and sector definitions in the EconSearch data, and
- Describes how these conventions and definitions have been modified to better suit the analysis of industries in the RDAWEP region.

Industry Classifications

Industry-based data packages use the Australian and New Zealand Standard Industrial Classification (ANZSIC). The ANZSIC was revised in 2006 to capture new and emerging economic activities such as Internet publishing and broadcasting, the provision of Internet access services, computer retailing, and the manufacture of communication equipment.

Australian Bureau of Statistics (ABS) Census data are usually provided at a 19-industry level using the following ANZSIC categories:

No.	INDUSTRY
A	Agriculture, Fishing and Forestry
B	Mining
C	Manufacturing
D	Electricity, Gas, Water and Waste Services
E	Construction
F	Wholesale Trade
G	Retail Trade
H	Accommodation and Food Services
I	Transport, Postal and Warehousing Services
J	Information, Media and Telecommunications
K	Financial and Insurance Services
L	Rental, Hiring and Real Estate services
M	Professional, Scientific & Technical Services
N	Administrative and Support Services
O	Public Administration and Safety
P	Education and Training
Q	Health Care and Social Assistance
R	Cultural and Recreational Services
S	Other Services
X	Inadequately Stated/Not described

Table 1: ANZSIC 19-Industry Level Classification.

This listing is suitable for the analysis of industries in most Australian regions; however, it is problematic for analysing the RDAWEP regional economy because:

- Agriculture, fishing and forestry are amalgamated as a single *primary production* industry, with one set of data provided.
- This makes it impossible to extract agriculture, fishing, and forestry specific data (such as the level of employment in each industry).
- The RDAWEP region has a relatively minor forestry industry, whereas agriculture and fishing are important employment and economic drivers.
- Separate data for the agriculture and fishing industries are required for analysing the RDAWEP economy.
- Fishing industry data also include data about aquaculture, which is a key regional industry, but aquaculture specific data cannot be identified using the ABS 19-level ANZSIC.

The ANZSIC system also does not identify tourism and food as separate industries. However, tourism and food are two of the region's fastest emerging sectors, with substantial potential for future growth and economic impact.

Industry Rankings

The 19-industry level ANZSIC system also creates problems for ranking the region's industries.

Based on employment and using the 19-industry level ANZSIC system; the agriculture, forestry and fishing industry was the region's largest employing industry in 2014-15, providing 4,477 or 17.5% of the region's jobs.

However, if agriculture, fishing and aquaculture are analysed as separate industries (which can be achieved using 78-industry level data); the ranking of the region's industries by employment changes substantially. Under this scenario:

- Health care and social assistance was the region's largest employing industry in 2014-15, providing 3,509 or 13.7% of the region's jobs,
- Agriculture was the region's second largest employer, providing 3,104 jobs and 12.10% of regional employment, and
- Fishing and aquaculture (which are high profile regional industries) did not rank in the top ten listing of regional employers – for detail see **Paper 2: Regional Employment 2014-15**.

EconSearch Data Packages

In order to provide better understanding of the region's industries, EconSearch has prepared data at a 20 and 78-industry level for the RDAWEP region and each of the region's eleven LGA.

The 20-industry level data listing adds a new industry category to the 19-level ANZSIC, to cover the ownership of dwellings. This is a notional industry sector designed to impute a return to the State's housing stock. The total value of output in this sector is an estimate of rent earned on leased dwellings, and imputed rent on the balance of owner-occupied dwellings.

The industry definitions and the relationship between the 20 and 78-industry levels are fully detailed by EconSearch in an appendix to this paper. The industry specifications are provided in context with recognised National Input and Output sector categories – see **Appendix 1: Industry Sector Definitions**.

However, for the purpose of providing better industry descriptions, EconSearch 78-industry level data are used predominantly in RDAWEP planning documents. The procedure for modifying and using the 78-level data is described next page.

Modification of the 78-industry Level Data

EconSearch data for the primary production area (i.e. Agriculture, Fishing and Forestry) are provided in the industry sectors in **Table 2**. Agriculture, fishing and aquaculture specific data can be identified by removing aquaculture and fishing (hunting and trapping) data, and treating these sectors as separate industries, as indicated in **Table 3**.

NATION INPUT OUTPUT SECTORS	RDAWEP and COUNCIL 78 SECTORS	RDAWEP and COUNCIL 20 SECTORS
Sheep, Grains, Beef and Dairy Cattle	Sheep	Agriculture, Forestry and Fishing
	Grains	
	Beef Cattle	
	Dairy Cattle	
Poultry and Other Livestock	Poultry	
	Pigs	
	Other Livestock	
Other Agriculture	Wine Grapes	
	Vegetables	
	Fruit and Nuts	
	Other Agriculture	
Aquaculture	Aquaculture	
Forestry and Logging	Forestry and Logging	
Fishing, Hunting and Trapping	Fishing, Hunting and Trapping	
Agriculture, Fishing and Forestry Support Services	Agriculture, Fishing and Forestry Support Services	

Table 2: EconSearch 78 and 20 Industry Classifications.

NATION INPUT OUTPUT SECTORS	RDAWEP and COUNCIL 78 SECTORS	RDAWEP and COUNCIL INDUSTRIES MODIFIED STRUCTURE
Sheep, Grains, Beef and Dairy Cattle	Sheep	Agriculture
	Grains	
	Beef Cattle	
	Dairy Cattle	
Poultry and Other Livestock	Poultry	
	Pigs	
	Other Livestock	
Other Agriculture	Wine Grapes	
	Vegetables	
	Fruit and Nuts	
	Other Agriculture	
Forestry and Logging	Forestry and Logging	
Agriculture, Fishing and Forestry Support Services	Agriculture, Fishing and Forestry Support Services	
Aquaculture	Aquaculture	Aquaculture
Fishing, Hunting and Trapping	Fishing, Hunting and Trapping	Fishing

Table 3: RDAWEP Modified Industry Structure.

This modification has the consequence that data for forestry and logging, and data for agriculture, fishing and forestry support services, will be attributed to the agriculture industry. This should be of minimal consequence because these industry sectors are relatively minor and should not skew the agriculture industry data to a concerning degree. The application of this modified industry structure can be demonstrated using regional employment data.

When analysing employment data, the number of jobs, percentages and FTE positions for the aquaculture and fishing industries are clearly identified, and sector data can be summed to produce totals for the agriculture industry – see **Table 4**

INDUSTRY	INDUSTRY SECTOR	TOTAL EMPLOYMENT			
		(Jobs)	(%)	FTE	(%)
Agriculture	Sheep	880	3.4	1,155	4.4
	Grains	1,583	6.2	2,119	8.1
	Beef Cattle	465	1.8	579	2.2
	Dairy Cattle	0	0.0	0	0.0
	Poultry	4	0.0	5	0.0
	Pigs	6	0.0	8	0.0
	Other Livestock	0	0.0	0	0.0
	Wine grapes	11	0.0	6	0.0
	Vegetables	12	0.0	15	0.1
	Fruit and Nut	11	0.0	7	0.0
	Other Agriculture	5	0.0	7	0.0
	Forestry and Logging	4	0.0	5	0.0
	Ag., Forestry and Fishing Support Services	120	0.5	148	0.6
Agriculture Sub-total		3,101	11.4	4,054	14.7
Aquaculture	Aquaculture	708	2.8	510	2.0
Fishing	Fishing, Hunting and Trapping	667	2.6	348	1.3

Table 4: RDAWEP Agriculture, Aquaculture, and Fishing Industry Employment 2014-15

Agriculture, Fishing and Forestry Services

The ANZSIC 78-industry level provides information about Agriculture, Fishing and Forestry Support Services, which indicates that 120 jobs were provided by this sector during 2014-15 – see **Table 4**. Under the modified industry structure proposed above, these jobs are allocated to the agriculture industry.

Advice was sought from EconSearch about whether it was possible to identify the number of support services jobs in the agriculture, forestry and fishing sectors, so that they could be allocated to the respective industries.

EconSearch estimated that about 5% of the employment is for forestry support services; 56% is for shearing services, and that 40% is shared among other agriculture and fishing support services. However, EconSearch advised that the ANZSIC system does not provide sufficient useable data to make a reliable distinction as to which sectors are receiving the support services.

Support services data are consequently allocated to the agriculture industry. *This means that agriculture data might be slightly over-stated.*

Application of the Modified Industry Model

It is intended that this modified industry model will be used for analysing the EconSearch data at both the regional and Council level, and will form the basis for discussing regional industries in future RDAWEP planning documents.

The 78-industry data listing has the advantage that it will enable Councils to identify the employment levels and economic contribution of different industry sub-sectors. For example, the data in **Table 4** clearly demonstrate that grain is the largest employing sector in the agriculture industry, providing about half (51%) of the region's agricultural jobs in 2014-15.

EconSearch Industry Data - Other Issues

Processed Seafood Manufacturing – Implications for the Analysis of Fishing and Aquaculture Industry Data

Under ANZSIC conventions, data about the processing of numerous food products are listed under the manufacturing industry. This includes the processing of seafood, meats, dairy products, fruit and vegetables, grains and cereals, and some bakery products – see **Appendix 1**.

A consequence of this ANZSIC convention is that some of the data provided for the fishing and aquaculture industries (such as employment levels, and the value of exports) might appear lower than expected, because these are listed under processed seafood products within manufacturing, rather than as part of the fishing and aquaculture industries.

In **Table 4**, for example, the number of aquaculture jobs is given at 708, with 667 jobs identified for the fishing industry. Some people might think these job numbers are low, given the importance of the fishing and aquaculture industries to the regional economy. However, in 2014-15, an additional 202 jobs are identified under processed seafood products within manufacturing, bringing the collective number of jobs that could be attributable to the fishing and aquaculture industries to 1,577.


Tourism Industry

The ANZSIC system does not identify tourism as a separate industry and consequently does not produce tourism industry specific data. This is due to the unique nature of the tourism industry.

Tourism-related activity is diverse, and tourists consume the products and services that are generated by a range of industries defined by ANZSIC. For example, hospitality services consumed by tourists are provided by the ANZSIC accommodation and food services industry. Tourists also consume the products and services that are generated by the retail trade; information, transport, cultural and recreational services industries.

The problem is that these goods and services are also consumed by local people as well as tourists, but only the portion consumed by visitors can be attributed to tourism industry activity – e.g. in 2014-15 1,386 jobs were provided in the region's accommodation and food services industry. Some of these jobs would have been provided to directly service tourists, but the number of tourism-related jobs is unknown, and cannot be identified from the employment data.

Tourism industry employment and economic data are consequently derived from a range of other sources, including research undertaken by the South Australian Tourism Commission, and Regional Tourism Satellite Accounts (TSA) produced by Tourism Research Australia (TRA). TSA



evaluate tourism industry activity and performance within a national accounting framework, and measure the direct and indirect impacts of tourism on regional economies.

While TSA data for the Eyre Peninsula Tourism Region provides a better understanding of the region's tourism industry, caution needs to be exercised when comparing these data with data provided for other industries under ANZSIC, because it runs the risk of double counting. For example, tourism cannot be ranked against other ANZSIC industries on the basis of employment, because tourism-related jobs would be included in the job data for the ANZSIC industries.

The risk of double counting also applies to data about tourism contribution to Gross Regional Product (GRP).

As the ANZSIC system does not identify tourism as an industry, the EconSearch data packages provided to Councils exclude tourism industry data. Tourism industry expenditure is the exception, and this is provided by EconSearch as a component of the region's exports.

Tourism expenditure is a measure of the value of sales of goods and services to visitors to the region. EconSearch has estimated this expenditure from a number of sources, including primary data from TRA, detailed TSA data for both domestic and international visitor expenditure, and datasets of tourism expenditure from SA tourism profiles (which includes estimates for domestic day, domestic overnight and international visitor expenditure).

The EconSearch estimates involve a number of adjustments to develop concordance between SA tourism regions, the RDAWEP region and the region's eleven LGAs. Further adjustments were made to make the data consistent with accounting conventions used in national, State, and regional economic modelling. These data are provided on an industry sector basis for the region and each LGA.

Food Industry

The ANZSIC system also does not identify food as an industry in its own right. However, food production, processing and export is a fast growing regional sector.

As with tourism, the region's food sector is very broad and incorporates products and services generated by the agriculture, aquaculture and fishing industries; as well as food processing undertaken within the manufacturing industry.


EconSearch therefore cannot provide data specific to the region's food industry. This data complication will be addressed where appropriate in future RDAWEP planning documents.

Summary

Industry-based data modelling in Australia is subject to the use of agreed conventions and industry definitions as determined by the ANZSIC system. EconSearch has therefore prepared data for the RDAWEP region and each LGA in a form that complies with ANZSIC.

However, the ANZSIC system makes it difficult to provide appropriate analysis and descriptions of the region's agriculture, fishing, aquaculture, tourism and food industries.

In view of the importance of the agriculture, fishing and aquaculture industries to the regional economy, the ANZSIC system has been slightly modified to distinguish agriculture, fishing and aquaculture specific data. This is possible due to the provision of 78-industry level data by EconSearch.



The modification separates fishing and aquaculture data from agriculture data; and agriculture sector data is summed to produce data for the agriculture industry as a whole. This modification will be applied in all future RDAWEP planning documents and related reports.

Data concerning the tourism and food industries will be addressed on a case-by-case basis in future RDAWEP reports, with appropriate clarification provided where applicable.

Appendix 1: INDUSTRY Sector Definitions

A uniform sector specification comprised of 78 and 20 intermediate industry sectors was applied to the RDAWP region and all the region's LGAs. Regional economic data at the 20-sector and 78-sector level. The sector specifications in terms of the national input-output sectors are detailed below.

National I-O 111 Sectors		RDAWEP & Councils, 78 Sectors		RDAWEP & Councils, 20 Sectors	
101	Sheep, Grains, Beef and Dairy Cattle	1	Sheep	1	Agriculture, Forestry and Fishing
		2	Grains		
		3	Beef Cattle		
		4	Dairy Cattle		
102	Poultry and Other Livestock	5	Poultry		
		6	Pigs		
		7	Other Livestock		
103	Other Agriculture	8	Winegrapes		
		9	Vegetables		
		10	Fruit and Nuts		
		11	Other Agriculture		
201	Aquaculture	12	Aquaculture		
301	Forestry and Logging	13	Forestry and Logging		
401	Fishing, hunting and trapping	14	Fishing, Hunting and Trapping		
501	Agriculture, Forestry and Fishing Support Services	15	Agriculture, Forestry and Fishing Support Services		
601	Coal mining	16	Coal Mining	2	Mining
701	Oil and gas extraction	17	Oil and Gas Extraction		
801	Iron Ore Mining	18	Iron & Non-ferrous Ore Mining		
802	Non Ferrous Metal Ore Mining				
901	Non Metallic Mineral Mining	19	Non Metallic Mineral Mining		
1001	Exploration and Mining Support Services	20	Exploration and Mining Support Services		
1101	Meat and Meat product Manufacturing	21	Meat and Meat Product Manufacturing	3	Manufacturing
1102	Processed Seafood Manufacturing	22	Processed Seafood Manufacturing		
1103	Dairy Product Manufacturing	23	Dairy Product Manufacturing		
1104	Fruit and Vegetable Product Manufacturing	24	Fruit and Vegetable Product Manufacturing		
1105	Oils and Fats Manufacturing	25	Oils and Fats Manufacturing		
1106	Grain Mill and Cereal Product Manufacturing	26	Grain Mill and Cereal Product Manufacturing		
1107	Bakery Product Manufacturing	27	Other Food Product Manufacturing		
1108	Sugar and Confectionary Mfg				
1109	Other Food Product Manufacturing				
1201	Soft Drinks, Cordials and Syrup Manufacturing				
1202	Beer Manufacturing	28	Other Beverages		
1205	Wine, Spirits and Tobacco	29	Beer Manufacturing		
1301	Textile Manufacturing	30	Wine, Spirits and Tobacco Mfg		
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	31	Textiles, Clothing and Footwear Mfg		
1303	Textile Product Manufacturing				
1304	Knitted Product Manufacturing				
1305	Clothing Manufacturing				
1306	Footwear Manufacturing				
1401	Sawmill Product Manufacturing			32	Sawmill Product Manufacturing
1402	Other Wood Product Manufacturing	33	Other Wood Product Manufacturing		

National I-O 111 Sectors		RDAWEP & Councils, 78 Sectors		RDAWEP & Councils, 20 Sectors	
1501	Pulp, Paper and Paperboard Manufacturing	34	Pulp, Paper and Paperboard Manufacturing	3	Manufacturing (cont.)
1502	Paper Stationery and Other Converted Paper Product Manufacturing	35	Paper Stationery and Other Converted Paper Product Manufacturing		
1601	Printing (including the reproduction of recorded media	36	Printing (including the reproduction of recorded media)		
1701	Petroleum and Coal Product Manufacturing	37	Petroleum and Coal Product Manufacturing		
1801	Human Pharmaceutical and Medicinal Product Manufacturing	38	Pharmaceutical & Other Chemical Product Manufacturing		
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing				
1803	Basic Chemical Manufacturing				
1804	Cleaning Compounds and Toiletry Preparation Manufacturing				
1901	Polymer Product Manufacturing				
1902	Natural Rubber Product Manufacturing				
2001	Glass and Glass Product Manufacturing	39	Non-metallic Mineral Product Manufacturing		
2002	Ceramic Product Manufacturing				
2003	Cement, Lime and Ready-Mixed Concrete Manufacturing				
2004	Plaster and Concrete Product Manufacturing				
2005	Other Non-Metallic Mineral Product Manufacturing				
2101	Iron and Steel Manufacturing	40	Iron and Steel Manufacturing		
2102	Basic Non-Ferrous Metal Manufacturing	41	Basic Non-Ferrous Metal Manufacturing		
2201	Forged Iron and Steel Product Manufacturing	42	Metal Product Manufacturing		
2202	Structural Metal Product Manufacturing				
2203	Metal Containers and Other Sheet Metal Product manufacturing				
2204	Other Fabricated Metal Product manufacturing				
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	43	Motor Vehicles and Parts; Other Transport Equipment Manufacturing		
2302	Ships and Boat Manufacturing	44	Other Machinery & Equipment Manufacturing		
2303	Railway Rolling Stock Manufacturing				
2304	Aircraft Manufacturing				
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing				
2403	Electrical Equipment Manufacturing				
2404	Domestic Appliance Manufacturing				
2405	Specialised and other Machinery and Equipment Manufacturing				
2501	Furniture Manufacturing	45	Furniture Manufacturing		
2502	Other Manufactured Products	46	Other Manufactured Products		
2601	Electricity Generation	47	Electricity Generation	4	Electricity, Gas, Water and Waste services
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	48	Electricity Supply		
2701	Gas Supply	49	Gas Supply		
2801	Water Supply, Sewerage and Drainage Services	50	Water Supply, Sewerage and Drainage Services		
2901	Waste Collection, Treatment and Disposal Services	51	Waste Collection, Treatment and Disposal Services		

National I-O 111 Sectors		RDAWEP & Councils, 78 Sectors		RDAWEP & Councils, 20 Sectors	
3001	Residential Building Construction	52	Residential Building Construction	5	Construction
3002	Non-Residential Building Construction	53	Other Construction		
3101	Heavy and Civil Engineering Construction				
3201	Construction Services	54	Construction Services		
3301	Wholesale Trade	55	Wholesale Trade	6	Wholesale Trade
3901	Retail Trade	56	Retail Trade	7	Retail Trade
4401	Accommodation	57	Accommodation	8	Accommodation and Food Services
4501	Food and Beverage Services	58	Food and Beverage Services		
4601	Road Transport	59	Road Transport	9	Transport, postal and warehousing
4701	Rail Transport	60	Rail Transport		
4801	Water, Pipeline and Other Transport	61	Water, Pipeline and Other Transport		
4901	Air and Space Transport	62	Air and Space Transport		
5101	Postal and Courier Pick-up and Delivery Service	63	Transport Support Services and Storage		
5201	Transport Support services and storage				
5401	Publishing (except Internet and Music Publishing)	64	Publishing (except Internet and Music Publishing)	10	
5501	Motion Picture and Sound Recording	65	Communication Services		
5601	Broadcasting (except Internet)				
5701	Internet Publishing and Broadcasting and Services Providers, Websearch Portals and Data Processing Services				
5801	Telecommunication Services				
6001	Library and Other Information Services				
6201	Finance	66	Finance	11	Finance and Insurance
6301	Insurance and Superannuation Funds	67	Insurance & Other Financial Services		
6401	Auxiliary Finance and Insurance Services				
6601	Rental and Hiring Services (except Real Estate)	68	Rental, Hiring and Real Estate Services	12	Rental, Hiring and Real Estate Services
6701	Ownership of Dwellings	69	Ownership of Dwellings	13	Ownership of Dwellings
6702	Non-Residential Property Operators and Real Estate Services	68	Rental, Hiring and Real Estate Services (cont.)	12	Rental, Hiring and Real Estate Services (cont.)
6901	Professional, Scientific and Technical Services	70	Professional, Scientific and Technical Services	14	Professional, Scientific and Technical Services
7001	Computer Systems Design and Related Services				
7201	Building Cleaning, Pest Control, Administrative and Other Support Services	71	Administrative and Support Services	15	Administrative and Support Services
7501	Public Administration and Regulatory Services	72	Public Administration and Regulatory Services	16	Public Administration and Safety
7601	Defence	73	Defence		
7701	Public Order and Safety	74	Public Order and Safety		
8001	Education and Training	75	Education and Training	17	Education and Training
8401	Health Care Services	76	Health & Community Services	18	Health & Community Services
8601	Residential Care and Social Assistance Services				
8901	Heritage, Creative and Performing Arts	77	Cultural & Recreational Services	19	Cultural & Recreational Services
9101	Sports and Recreation				
9201	Gambling				
9401	Automotive Repair and Maintenance	78	Personal & Other Services	20	Personal & Other Services
9402	Other Repair and Maintenance				
9501	Personal Services				
9502	Other Services				