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# **IMPACT OF NATIONAL PARKS ON THE WESTERN PASTORAL REGION OF NSW**

Report to the:

**NSW Department of Environment and Conservation**

## **Final Report**

Prepared by....

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**ARMIDALE NSW**

**Date, November 2006**



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## **EXECUTIVE SUMMARY**

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The Parks and Wildlife Division of the Department of Environment and Conservation (DEC) stated the objectives for this project as follows:

1. To evaluate the regional economic impact of DEC Parks and Wildlife Division (PWD) expenditure on park management for all parks and reserves in western NSW through the use of input-output analysis.
2. To evaluate the regional economic impact of park visitor expenditure in the study area, through the use of input-output analysis using data collected during the peak Easter 2006 school holidays period.
3. To assess changes to the regional economies of the study areas currently occurring and expected to occur in the near future, with particular attention to the primary sector (agriculture and mining) and tertiary sector (especially recreation and tourism).
4. To project the above regional input-output tables for both areas to 2010 and to re-examine the impact of park management and park-related visitor expenditure on the regional economies of the study area.

The study region comprises the Western NSW pastoral region and consists of eight LGAs, i.e. Balranald, Brewarrina, Bogan, Cobar, Bourke, Central Darling, Wentworth, Broken Hill plus the Unincorporated Far West. The region contains eight National parks, 13 nature reserves, two historic sites, one State Conservation Area and one Aboriginal Area.

The Far West NSW region economy includes a vast area with a high dependence on primary industries. The main centre is Broken Hill which has been developed around the mining industry and as a regional and administrative centre. The dependence on mining resulted in little growth over the 1980s and 1990s as mining was scaled down.

Agriculture has been the other main industry with extensive grazing of sheep and more recently cattle being the main activity over most of the area. In recent times, agriculture has been a contributor to growth through increased cereal grain cropping using new crop management methods, and the development of pockets of intensive horticulture and cotton production along the main river systems. Those developments have led to growth of agricultural production although periodic drought has interrupted that trend.

For most of the last two decades, the overall population and employment has declined, including that of Broken Hill. In those circumstances, unemployment has tended to be above the national and NSW rate. The population is ageing, includes a significant indigenous component, and there is evidence than many young people leave the region at the

conclusion of schooling. The 2001 household income is 83 per cent of the NSW average related to high mining incomes and a non-drought year helping agricultural incomes. Government welfare benefits account for around 20 per cent of household income.

In the 1990s, there were substantial losses of employment, especially in the first half. The second half of the 1990s contained signs of a turnaround that has continued into the 2000s. Mineral prices improved, new intensive agricultural developments increased production along with improved commodity prices. This occurred in a context of strong national growth that would have had some spill over effects into the Far West.

The 2000s have been mainly drought affected and now there is the prospect of significant changes in water allocation and use that will constrain production from intensive agriculture. However, new mining developments are driving growth in selected locations including Broken Hill, Cobar and Pooncarie. As a result of those trends, the analytical models for the region have been based on a return to growth in employment of 0.9 per cent per year for the 2000s. That involves growth in mining production, steady agricultural production and some growth in the service industries. The critical assumptions are those that project a continuation of the buoyancy in the mining industry and relief from the current drought and water shortages that are impacting on agriculture.

The Far West NSW region generates a GRP of just over \$2,000m equivalent to about one per cent of the NSW economy. This involved the employment of almost 20,000 people with most located in Broken Hill. Overall the region exports more than it imports (rare among NSW regions) reflecting the substantial nature of the primary industries. Most of the non-primary industries are associated with the provision of services to primary industries and households.

The remoteness of the region means that visitation will be small relative to other coastal and highland areas. Visitors will also incur significant expenditures getting to the Far West and acquiring provisions for their visit. It is expected that there will be continued growth in visitor numbers which contrasts with the trends in NSW in the 2000s. This is based on the uniqueness of the region, the aging of the population and the improvement in access and facilities in the parks.

The DEC provided information on the expenditures for PA management and on the number of visitors to the PAs and the expenditures made by those visitors. Park management involved employing 77 people in 2006 and a total expenditure of \$5.8m. There were over 103,000 visitors to the PAs and their expenditure was estimated to be \$8.7m within the region. The input-output tables were used to estimate the flow-on impacts that are generated by these expenditures. A summary of the impacts is provided in the table below.

### Summary of Economic Impacts

Category	Park Management		Visitors Expenditure	
	Level	Share	Level	Share
<b>2005-06</b>				
GRP (\$m)	6.25	0.31	6.10	0.30
Household income (\$m)	4.02	0.58	2.55	0.37
Employment (no.)	101	0.51	102	0.51
<b>2010-11</b>				
GRP (\$m)	6.24	0.27	6.73	0.29
Household income (\$m)	3.90	0.55	2.56	0.36
Employment (no.)	99	0.48	102	0.50

The total impact of PA management and visitor expenditure is similar with each generating about \$6m of GRP and around 100 jobs. In terms of earnings for households PA management generates about \$4m and visitor expenditure about \$2.5m. Depending on the measure used, these amounts represent between 0.3 and 0.5 per cent of the economic activity.

The contribution to the economy of the PA related activities is modest which reflects the small level of activity and the significant size of the Far West region economy. The substantial agricultural and mining operations do generate a substantial amount of economic activity although it is concentrated in a small number of locations.

The forward projections include growth in visitor numbers at 2.25 per cent per year and growth in the economy of 0.9 per cent per year. By 2010-11, these trends do not change significantly the level of the impacts or the relative contribution to the Far West region economy.

The future development of the Far West NSW region will be driven by the likely continued development of the mining industry and the possible contraction of agriculture because of the limited access to water for irrigation.

There is likely to be a continuing increase in visitor numbers to the Far West NSW region. However, visitation is unlikely to become a significant driver of economic development. The improvement in facilities and visiting options would seem likely to attract a growing number of people interested in remote areas. A growing economy with associated improvement in the services and other facilities in the region would support the growth in visitation to the region.

## **ACKNOWLEDGEMENTS**

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CARE wishes to acknowledge the assistance provided by members of the Department of Environment and Conservation for their assistance in providing data and other information essential for this study. They have also assisted in the preparation and finalisation of this report. The time taken by all these individuals to provide data and information is greatly appreciated.

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## **ACRONYMS**

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ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industry Classification
DEC	NSW Department of Environment and Conservation
DIPNR	Department of Planning, Infrastructure and Natural Resources
GRP	Gross Regional Product
LGA	Local Government Area
LQ	Location Quotient
PA	Protected Areas
PER	Population Employment Ratios



# 1 INTRODUCTION

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National parks are part of the capital of communities and play a role in the development of the community and the economy. As well as serving environmental objectives, the national parks form part of the attraction of a region that influences people in decisions about where they live and where they visit. As a result, national parks are part of the economic development of a region. The management and operation of the parks is an economic activity in its own right contributing to the local economy. The attraction of visitors and the expenditures that they make during those visits is part of the total demand in those economies that support business activity, employment and provides household income to residents.

## 1.1 STUDY OBJECTIVES

The region considered in this study covers a large part of Western NSW. The Protected Areas (PAs) in the study region include eight national parks, 13 nature reserves, two historical sites, one State Conservation Area and one Aboriginal Area as shown in Figure 1-1 and listed in Attachment 4.

This economic impact analysis includes the management and operation of the PAs and the expenditures visitors incur in association with their visit to the PAs. The region comprises eight LGAs (Balranald, Brewarrina, Bogan, Cobar, Bourke, Central Darling, Wentworth, Broken Hill) and the Unincorporated Far West.

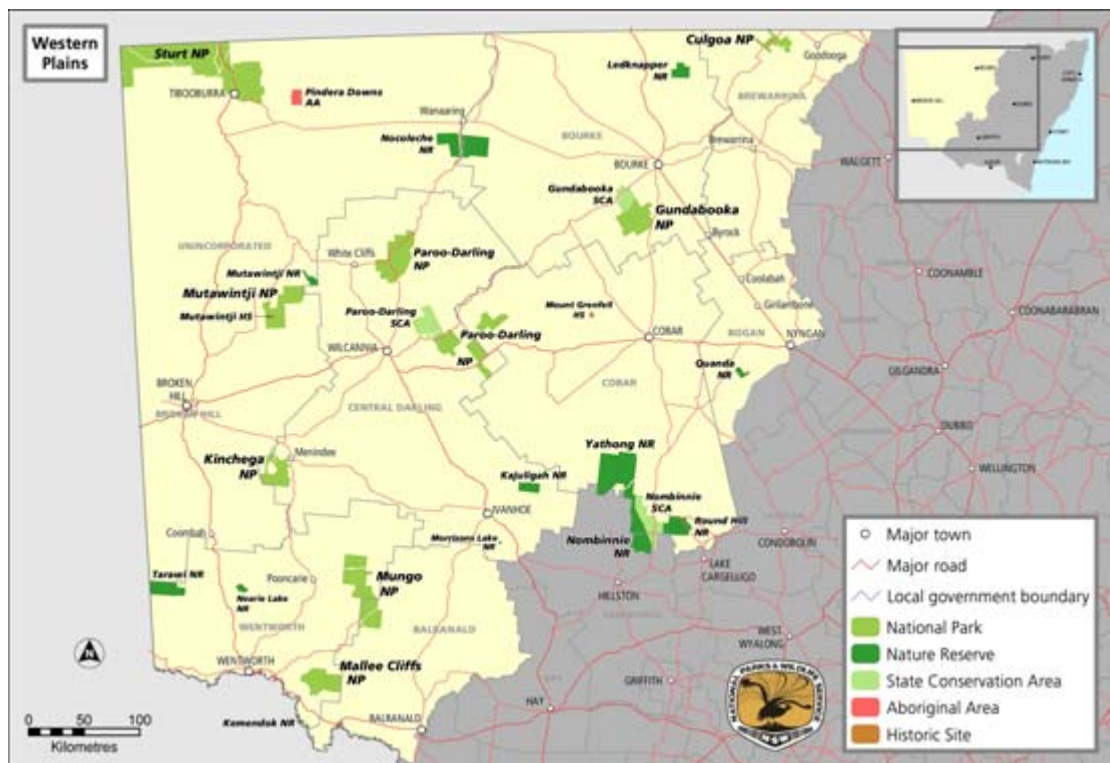
The DEC has provided information on expenditures associated with the operation and development of the reserves and PAs. DEC has also provided a set of data on the expenditure of visitors to the PAs. These data are used in the analysis to estimate the size and nature of the flow-on effects that these expenditures generate, and to indicate the relative importance of those activities to the regional economy.

There are four main components to this work. First, there is the construction of the input-output tables for each of the regions. These tables describe the economic structure of the regions at that point in time.

Second, there is an analysis of trends in the regional economies. A set of analyses based on the Population Census data from 1981 to 2001 highlight how those economies have changed over that period and at the same time compares those changes with trends in the NSW economy.

Third, there is the impact analysis of the expenditures incurred by the agencies in operating and maintaining the PAs and by those visiting the PAs. The flow-on effects are estimated through the use of input-output models.

Figure 1-1: The Far West NSW Region



Fourth, the above analyses provide the basis for projections of the likely trends in the regional economy, national park management expenditures and visitor expenditures through to 2011. This provides a future perspective on how the relative contribution of Pas to the regional economy may change.

To make the analysis possible, appropriate input-output tables are required. In general, input-output tables are constructed for Population Census years because the it provides key data for those tables. The most recent Population Census data are for 2001, five years ago. The development of appropriate input-output tables involved building the table for 2000-01 and then developing projections of key data forward to 2005 and 2010 to enable tables for 2005-06 and for 2010-11 to be estimated

## 1.2 THE FAR WEST NSW REGION

DEC defined the Far West Pastoral Region to include eight LGAs and the Unincorporated Far West. The region covers the vast area of Western NSW and is bounded by the neighbouring states of Queensland, South Australia and Victoria. The area covers approximately 38 per cent of the State with a population of 45,000 people. The region is sparsely populated and is the driest area in NSW.

The region includes the Barwon-Darling river system that flows through the region from Queensland to its juncture with the Murray. The Murray

forms the southern boundary of the region. These river systems provide an important water resource for the region. Most of the region is suitable only for extensive grazing activities with an increasing presence of cattle in recent years. The past decades have also seen areas of irrigation develop along the river systems. The use of that water occurs under a range of allocation and licence systems and is dependent on river flows that vary substantially from year-to-year.

The main population centres occur in Broken Hill and Wentworth in the south adjacent to Mildura. The mining industry is the key to Broken Hill and mining has been reduced over the past 20 years or more but is on the cusp of a revival stimulated by the present boom in resource prices. Cobar has also been a base for mining activity. In the remainder of the region, there is little mining activity apart from some opal mining (White Cliffs) and mineral sands mining about to commence at Pooncarie.

The Wentworth area is linked to the larger developments in Victoria that are based on irrigated production of a range of horticultural products. In recent times, the large dried vine fruit industry has diminished in favour of wine grape production. Some of those developments have spread north along the Darling River to include the Tandou and other irrigation farming operations near Menindee. Those activities include cotton, fruit and wine grape production with some orientated to the supply of early season products that gain early season premium prices.

In the past decades, the growth in intensive agricultural production has offset some of the declines in mining and extensive grazing in the region. In the 2000s, it may again be the turn of mining to give the impetus to growth. Growing concerns about access to and use of irrigation water is likely to crimp further growth in agricultural production.

### **1.3 STRUCTURE OF THE REPORT**

The following section of the report provides information about the Far West region economy leading to the development of the input-output tables for the analysis. Those tables are used in Section 3 to assess the total impact on the economy of the PA management expenditures and the expenditure of visitors to the PAs. The final section includes a summary and conclusions from the study.

## 2 ECONOMIC INDICATORS

### 2.1 DEMOGRAPHIC TRENDS

The trends in population and employment are displayed in Table 2-1. There has been a decrease in population and employment throughout the last two decades. The employment share of the population experienced a decrease in 1986 and has remained below the NSW state average of 43 per cent. These are all signs of a region in decline.

**Table 2-1: Population and Employment Trends Far West NSW**

Census Year	Total Employment	Total Population	Employment Share of Population	Average Annual Change Between Census Years			Total Change Between Census Years	
				Employment	Population	Population	Employment	Population
			%	%	%	no.	no.	
1976		59,300						
1981	23,488	58,700	40.0		-0.20		-600	
1986	20,919	55,630	37.6	-2.29	-1.07	-2,569	-3,070	
1991	21,084	53,770	39.2	0.16	-0.68	165	-1,860	
1996	18,614	50,601	36.8	-2.46	-1.21	-2,470	-3,169	
2001	18,107	47,000	38.5	-0.55	-1.47	-507	-3,601	

An alternate perspective on employment and unemployment is provided by the estimates prepared from unemployment data and information from the labour force survey. The data on the labour force are estimates and so include some random statistical variations but remains as a useful indicator of trend, while the unemployment indicator is likely to be a reasonable estimate although the definition of unemployment changes over time.

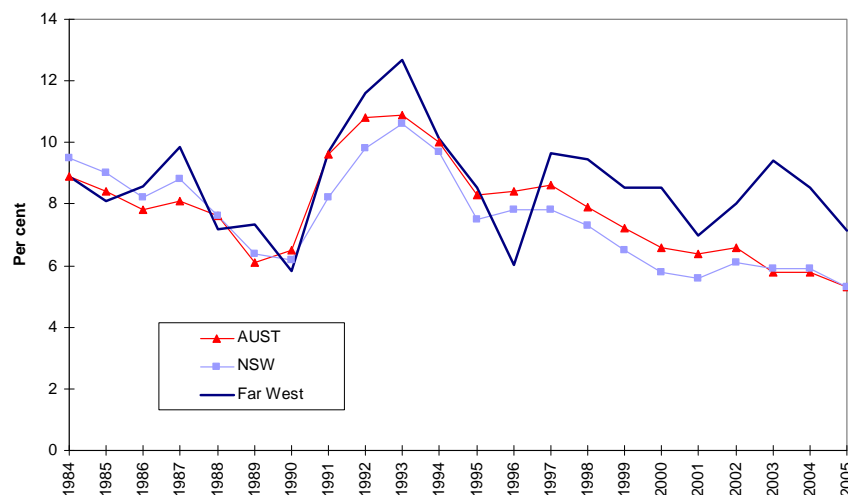
These data make it possible to estimate the size of the labour force and shows the level and percentage of the labour force that is unemployed. These estimates are shown in Table 2-2 using the June Quarter data. These data indicate a decreasing trend in the labour force and employment over most of the two decades although the decrease seems to be less than that indicated by Population Census data. The lowest level occurred in 2003 when drought conditions were severe. There is a sign of a revival in employment in the data for recent years, most likely linked to increased mining activity.

For most of the period the Far West region experienced a similar trend in unemployment compared to NSW (Figure 2-1). Following 1998 the rate of unemployment has remained above the NSW and Australian rates. A combination of the effects of drought and the on-going decline in the mining industry would have been critical factors. It seems that there is also a core of people who are unwilling to move to other locations in search of work.

**Table 2-2: Employment and Unemployment Far West**

Year	Far West				Unemployment	
	Labour Force no.	Derived Employment no.	Unemployment no.	%	NSW %	AUST %
1984	26,107	26,030	2,318	8.9	9.5	8.9
1985	24,392	24,335	1,971	8.1	9.0	8.4
1986	26,672	26,605	2,282	8.6	8.2	7.8
1987	26,231	26,152	2,583	9.8	8.8	8.1
1988	26,917	26,857	1,935	7.2	7.6	7.6
1989	24,249	24,192	1,779	7.3	6.4	6.1
1990	24,593	24,554	1,435	5.8	6.2	6.5
1991	26,812	26,745	2,599	9.7	8.2	9.6
1992	25,387	25,319	2,944	11.6	9.8	10.8
1993	24,733	24,655	3,137	12.7	10.6	10.9
1994	23,047	22,993	2,337	10.1	9.7	10.0
1995	24,776	24,722	2,112	8.5	7.5	8.3
1996	25,958	25,925	1,566	6.0	7.8	8.4
1997	24,498	24,444	2,366	9.7	7.8	8.6
1998	23,862	23,815	2,260	9.5	7.3	7.9
1999	23,222	23,181	1,985	8.5	6.5	7.2
2000	23,351	23,310	1,997	8.6	5.8	6.6
2001	23,044	23,013	1,612	7.0	5.6	6.4
2002	22,325	22,287	1,790	8.0	6.1	6.6
2003	21,107	21,064	1,986	9.4	5.9	5.8
2004	22,088	22,045	1,883	8.5	5.9	5.8
2005	26,260	26,219	1,876	7.1	5.3	5.3

Source: DEWR (2002), June quarter

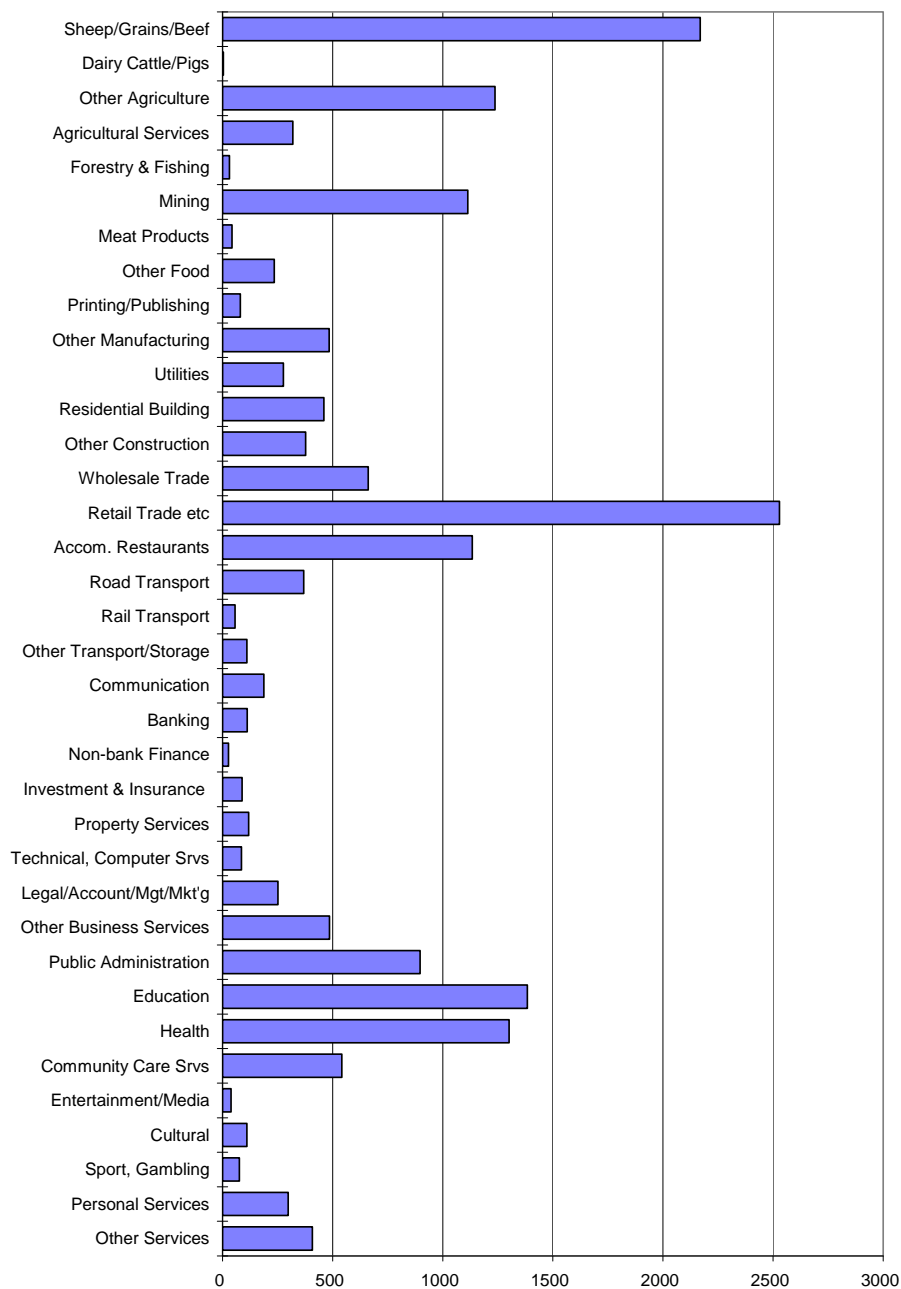
**Figure 2-1: Unemployment and Employment Far West NSW**

The trends in employment by industry are shown in Table 2-3. Primary industry is the most important sector within the region employing 27 per cent of the labour force in 2001 having declined from 34 per cent. In 2006, the level of primary industry employment is subject to improvements in the mining industry, but drought and limited irrigation water will curtail agricultural activities. The trade sector is the next most important with 24 per cent and rising steadily. The public service sector has shown the largest increase in employment share in the 1990s. Overall the number employed decreased dramatically between 1991 and 1996 but has stabilised since then, coinciding with a period of strong growth in the NSW economy.

**Table 2-3: Industry Composition of Employment**

Industry	Employment (No.)			Employment (%)		
	1991	1996	2001	1991	1996	2001
Primary industry	7,081	5,480	4,874	34	29	27
Manufacturing	767	719	843	4	4	5
Utilities & building	1,355	1,276	1,114	6	7	6
Trade	4,587	4,233	4,324	22	23	24
Transport & communication	1,131	844	724	5	5	4
Business & financial services	2,125	1,922	2,062	10	10	11
Public sector services	3,187	3,257	3,273	15	17	18
Personal services	852	884	892	4	5	5
<b>Total</b>	<b>21,084</b>	<b>18,614</b>	<b>18,107</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Figure 2-2: Employment Distribution by Industry Far West NSW 2001**



A detailed industry composition of employment for 2001 is shown in Figure 2-2. This pattern is generally similar to much of inland NSW with a high proportion of people employed in primary industry, the trade and accommodation sectors and those services with a large public funding base. In this case, broadacre agriculture is of particular significance along with other agriculture which includes horticulture and cotton production. Mining is also shown as a significant employer. In terms of number employed, retail trade is the stand out. Public administration, education and health make up the other major service industries in the Far West. The community care sector is lower than expected.

The main source of household income in the Far West region is wages and salaries contributing 64 per cent of overall income (Table 2-4). A relatively high percentage of income is obtained through government cash benefits which contribute 20 per cent of income which is double the NSW average. The high level of payments made by the government may be attributed to the higher number of indigenous Australians who live in the region, the higher than average unemployment benefits and the overall ageing of the population. Own unincorporated businesses contribute 10 per cent to household income which is higher than the average for NSW. The average weekly household disposable income is \$747.89 which is 84 per cent of the NSW average and is similar to other inland regions in NSW.

**Table 2-4: Composition of Household Income Far West**

Income Category	Far West	Percentage	NSW	Percentage
Wages and salary (\$m)	493.86	63.54	99,869.20	71.95
Own unincorporated business (\$m)	84.10	10.82	8,733.10	6.29
Investment (\$m)	37.20	4.79	12,121.00	8.73
Superannuation and annuity (\$m)	8.60	1.11	2,962.30	2.13
Government cash benefits (\$m)	148.70	19.13	13,919.00	10.03
Other income (\$m)	1.80	0.23	1,203.10	0.87
<b>Total income from all sources (\$m)</b>	<b>777.30</b>	<b>100.00</b>	<b>138,807.70</b>	<b>100.00</b>
Net tax (\$m)	125.80	16.18	31,388.50	22.61
<b>Average Weekly Household Disposable Income (\$)</b>	<b>747.89</b>		<b>895.00</b>	

**Table 2-5: Indigenous Population Far West NSW 2001**

LGA	Indigenous Population	Population	Percentage of Aboriginal Population.
Bogan	326	5,002	6.52
Bourke	962	3,754	25.63
Brewarrina	1,103	2,066	53.39
Cobar	467	3,078	15.17
Balranald	171	2,712	6.31
Wentworth	542	6,795	7.98
Broken Hill	1,039	20,359	5.10
Central Darling	765	2,381	32.13
Unincorporated Far West.	65	853	7.62
<b>Far West</b>	<b>5,440</b>	<b>47,000</b>	<b>11.57</b>

The indigenous people comprise almost 12 per cent of the population in the Far West region as indicated in Table 2-5. They are concentrated in the Brewarrina, Bourke, Broken Hill and the Central Darling LGAs. This

situation creates special needs in relation to the development of industry and employment and the provision of services.

Figure 2-3 shows the age profile for the Far West region compared to NSW as a whole. While there is variation among the LGAs, the pattern shown is common to most areas. There is an ageing of the population reflected in part by the higher proportion of the population in the Far West in the age groups of 55 and above compared to the NSW shares. The Far West has a low proportion of the population in the working age groups and is particularly deficient in the 15 to 29 age groups. It is apparent the many leave the region after schooling to take up education and employment opportunities in larger centres. This has led to a situation where the number in the younger working age groups are less than those in the older working age groups and approaching retirement. In some areas, there are a higher number of children in the population suggesting that the Far West has a higher birth rate than the NSW average. That is often the case with the indigenous population.

**Figure 2-3: Age Profile Far West**

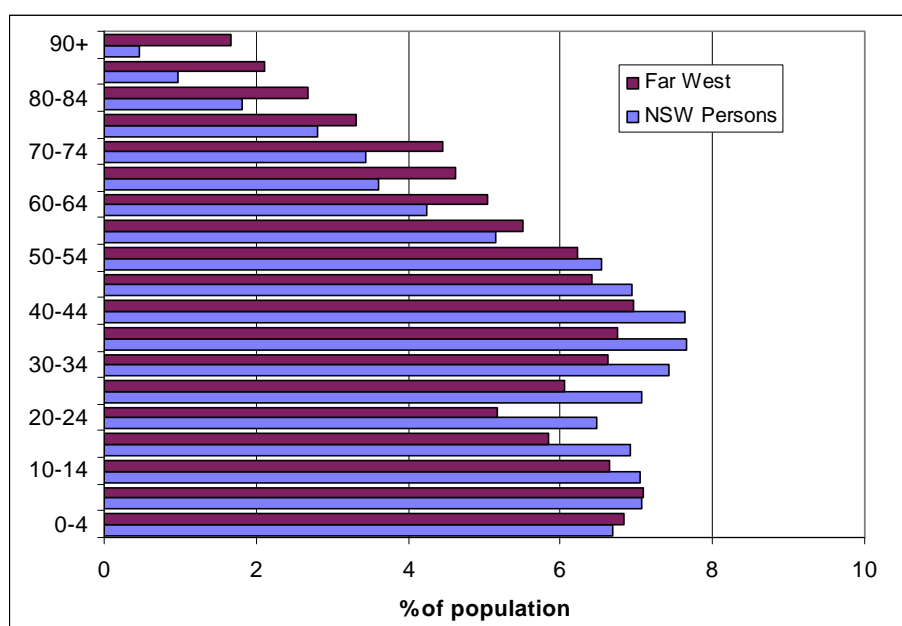
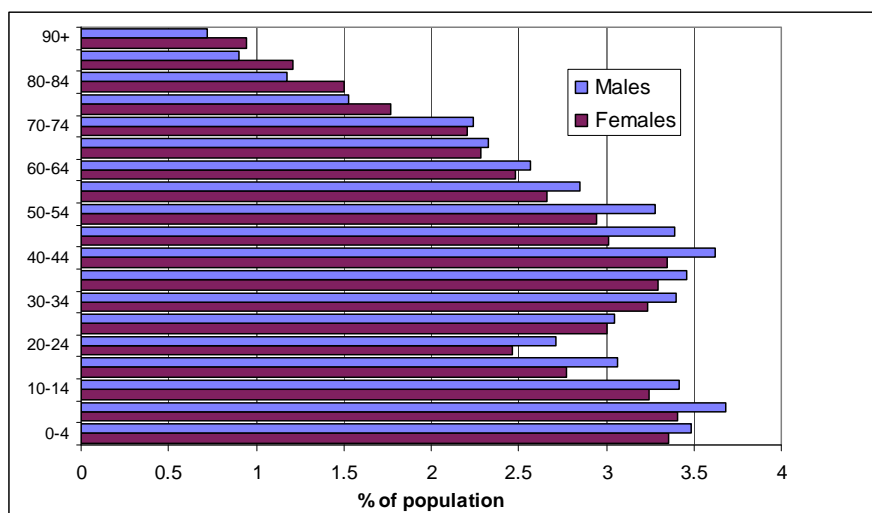


Figure 2-4 shows the age profile for the Far West region according to sex. There is a higher percentage of males compared to females in all but the highest age groups. This may be attributed to employment opportunities available within the region. The agriculture and mining industries that are a major part of the economy tend to employ more males than females. While the retail trade, education and health sectors provide many employment opportunities for the female labour force, they are relatively less important in the Far West than in NSW as a whole.



**Figure 2-4: Age Profile by Sex**

## 2.2 MAJOR INDUSTRIES

### 2.2.1 Agricultural Production

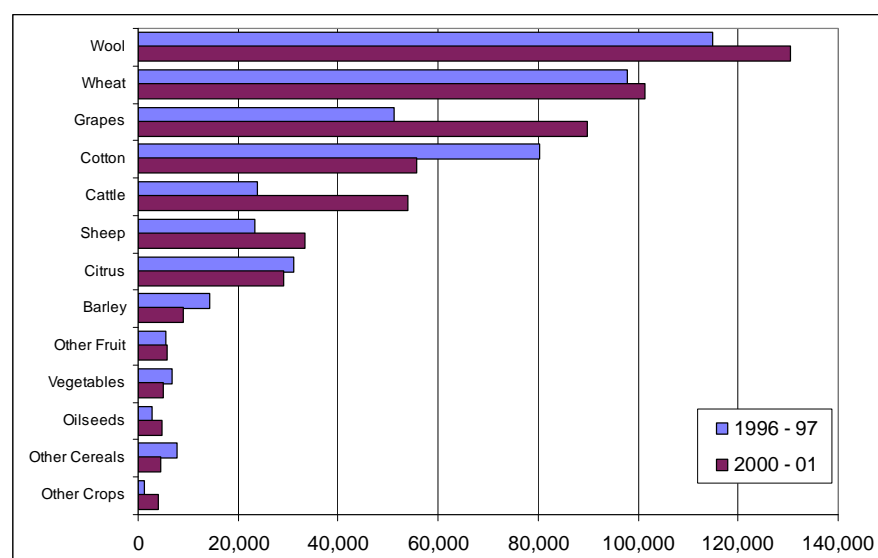
An agricultural census is completed every five years with the most recent being undertaken for the 2000-01 year. This provides information on the structure and value of agricultural production. Agriculture is a core industry in the Far West region as indicated in (Table 2-6). The total value was \$530m in 2000-01 which was almost 15 per cent higher than 1996-97 in nominal terms

The value of agricultural production includes substantial production of wool, wheat, grapes, cotton, cattle and sheep. The vast area and access to irrigation water in parts of the region has resulted in the Far West producing a wide variety of commodities as well as the products from grazing. Production is variable from year to year depending on rainfall and other conditions. Winter cereal crops are an important contributor to agricultural production but are highly variable over time.

The change in the gross value of agricultural output between 1996-97 and 2000-01 is shown in Figure 2-5. This indicates an increase in the production of wool, sheep, wheat, grapes and cattle. The main industry to experience a decrease in the gross value of output was cotton which would be linked to the availability of water for irrigation. Since 2000-01, drought effects would have impacted on grazing and cereal production.

**Table 2-6: Gross Value of Agricultural Production, Far West NSW**

	1996-97 (\$'000)	2000-01 (\$'000)
Wool	114,925	130,553
Wheat	97,792	101,246
Grapes	51,144	89,702
Cotton	80,281	55,638
Cattle	23,935	53,865
Sheep	23,321	33,436
Citrus	31,210	29,157
Barley	14,210	9,133
Other fruit	5,619	5,870
Vegetables	6,887	5,111
Oilseeds	2,736	4,807
Other cereals	7,751	4,486
Other crops	1,358	3,983
Milk	163	1,583
Hay	554	1,007
Bees	550	634
Sorghum	206	209
Pigs	28	121
Apples	98	62
Pasture seed	10	34
Rice	616	-
<b>Total</b>	<b>463,395</b>	<b>530,638</b>

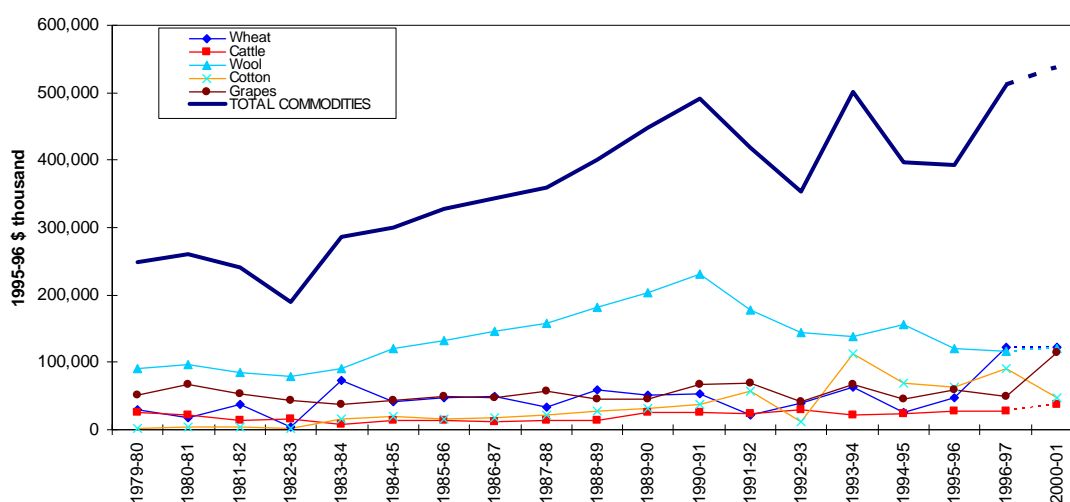
**Figure 2-5: Gross Value of Agricultural Production, Far West (\$'000)**

The trend in agricultural production for the Far West is shown in Figure 2-6 in constant value terms to reflect the real trend in production. Annual data are not available since 1996-97 and the most recent data refer to 2000-01. There has been a strong underlying growth in production since 1980. From 1980 to 1990 the growth within the industry was driven by the growth of the wool and wheat industry. That has included the application of new production methods for cereal crops in the low rainfall areas. Wool has

declined through the 1990s as land was used for cereal production and cattle substituted for sheep on grazing land. In the 1990s, most growth has come from cotton and grape production.

There have been considerable fluctuations in the level of production since 1990 associated with major variations in seasonal conditions. This has included continuing drought conditions in the 2000s. The extensive dry conditions have restricted the level of irrigation production in this decade and changes in the conditions for accessing water for irrigation production will be a critical factor in the future development of agriculture in the Far West.

**Figure 2-6: Gross Value of Agricultural Production Constant Value (\$'000, 1995-96)**



## 2.2.2 Building and Utilities

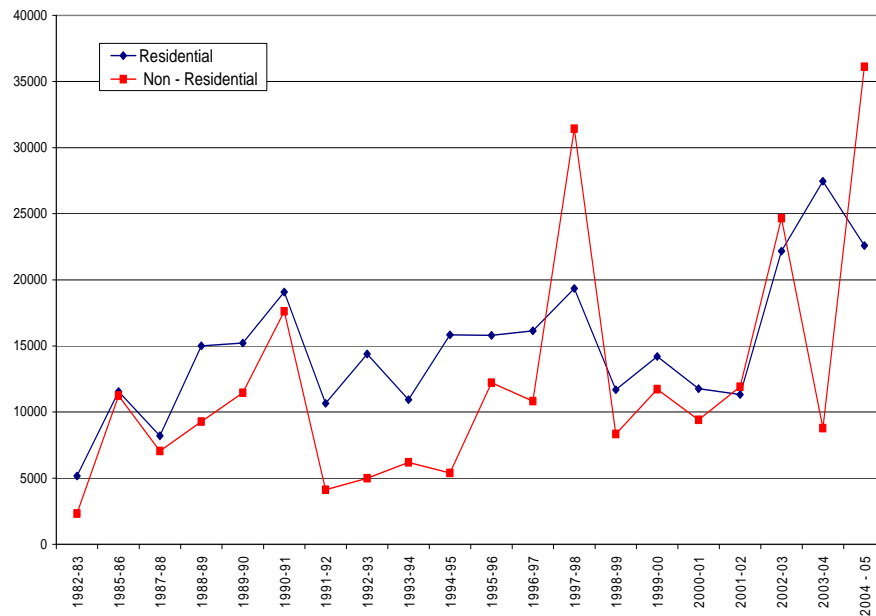
Building activity is a significant contributor to economic activity in regions but is responsive to the level of economic growth. Thus, it is a useful indicator of the performance of an economy. Residential construction is an indicator of population growth while non-residential construction is an indicator of the overall level of business investment. The level of residential and non-residential building activity is shown in Figure 2-7.

The key points from Figure 2-7 can be summarised as follows:

- There is a higher level of year-to-year variation in the non-residential category of construction. The non-residential category is subject to extreme variations linked to major development projects.
- For both categories, there was strong growth to 1991, a mostly stagnant level in the 1990s, and a resurgence of growth post 2000.
- Non-residential building peaked in 1997, 2002 and again in 2004.

These data indicate that economic growth has returned to the Far West region as a whole although there is variation among the LGAs included in the Far West.

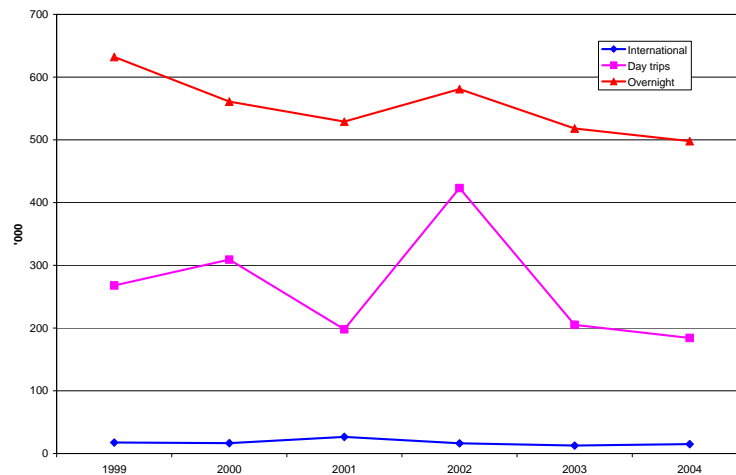
**Figure 2-7: Building Approvals Far West**



### 2.2.3 Tourism

A limited amount of data related to visitation to the Far West is available from the national data on tourism. These data are sample-based and are compiled independently of local data. The information is shown in Figure 2-8 for the day, overnight and international visitor categories. The main destinations for overnight and international visitors are the Broken Hill, Central Darling and Cobar LGAs.

**Figure 2-8: Tourism Far West**



The majority of visitors to the region are overnight visitors (Figure 2-8). The number of overnight visitors has declined steadily from 1999 to 2004 with a small upturn in 2002. This is a trend that is common throughout NSW. Day trips to the region have been volatile but also show a downward trend. International visitors account for only a small proportion of visitors. Like the other categories, the trend has also been downward since 2001.

## **2.3 TRENDS IN THE ECONOMY**

### **2.3.1 Major Industries: Location Quotients**

This analysis is based on employment data from the Population Censuses since 1981. Location quotients (LQ) are an indicator of the specialist industries in an economy. The value indicates the importance of the industry to the region relative to the importance to the nation. A value of 1.0 indicates the same level of importance at the regional and national levels, while a value of 16.5 for non ferrous metal ores in 2001 indicates that this industry is 16.5 times more important to the Far West NSW region economy than it is to Australia. Where the value is high (greater than 2) it indicates that those industries are likely to be key strengths in the region. The location quotients are shown in Table 2-7.

The LQs indicate the overall importance of mining within the region with the principal locations at Broken Hill and Cobar. Services to mining is also an important industry. Although the mining of metal ores is still the most important industry in terms of the LQs, there has been a substantial decline from a value of 45.5 in 1981.

The importance of agriculture is highlighted by the fact that four of the five most important industries are agricultural sectors. The variable values over time is indicative of the restructuring that has occurred in agriculture. The growth industries include beef cattle, other agriculture (cotton and horticulture) and grains. Wine and spirits is indicative of the development of wine processing in the Far West.

Among the other industries with values above 1.0 are the utilities providing electricity (some reflecting the need for local power supplies) and large numbers associated with water sewerage and drainage consistent with the large irrigation industry in part of the region. There is a notable sawmilling activity that has been based around special products such as red gum timber.

Public administration is an important part of the Far West NSW economy while the values over 1.0 for accommodation and restaurants and other services support the operation of significant visitor activities.

**Table 2-7: Location Quotients Far West**

Ranked Sectors (2001)	LQs					Employment
	1981	1986	1991	1996	2001	2001
Non-ferrous metal ores	45.5	39.2	25.9	25.1	<b>16.5</b>	964
Sheep	9.6	10.0	12.6	13.7	<b>12.6</b>	1110
Services to agric.; hunting	8.0	11.8	15.8	8.6	<b>7.8</b>	319
Beef cattle	2.3	1.3	1.7	2.2	<b>6.8</b>	362
Other agriculture	3.9	4.5	4.4	5.2	<b>5.8</b>	1237
Services to mining	3.3	2.0	2.5	4.2	<b>4.6</b>	111
Grains	1.1	2.3	2.6	4.3	<b>3.4</b>	698
Wine and spirits	0.6	2.4	2.1	2.7	<b>3.1</b>	119
Water, sewerage & drainage	1.5	1.9	2.3	2.8	<b>2.5</b>	114
Electricity	1.2	1.0	0.7	1.4	<b>1.8</b>	148
Fruit and vegetable products	0.2	0.2	0.8	0.3	<b>1.8</b>	45
Other mining	0.9	1.0	1.1	2.1	<b>1.7</b>	30
Gas	0.1	0.2	0.0	0.9	<b>1.6</b>	14
Textile fibres, yarns etc	0.1	0.1	0.1	0.1	<b>1.3</b>	21
Public administration	0.9	1.1	1.0	1.1	<b>1.3</b>	891
Other services	0.7	0.8	1.0	1.0	<b>1.3</b>	408
Accom. & restaurants	1.5	1.5	1.4	1.3	<b>1.2</b>	1134
Community care services	0.6	0.9	0.8	1.0	<b>1.2</b>	541
Agricultural, mining etc machinery	0.1	0.2	0.2	0.2	<b>1.1</b>	63
Sawmill products	0.3	0.2	0.2	0.9	<b>1.1</b>	33
Education	0.9	0.9	0.9	1.0	<b>1.0</b>	1385
Mechanical repairs	0.8	0.8	0.8	0.9	<b>1.0</b>	311
Health services	0.9	0.9	1.0	1.0	<b>1.0</b>	1302
Retail trade	0.8	0.8	0.8	0.9	<b>0.9</b>	2190
Road transport	2.0	1.0	1.0	1.0	<b>0.9</b>	369
Other business services	0.7	0.4	0.7	0.8	<b>0.9</b>	486
Libraries, museums, arts	1.1	0.8	0.9	1.6	<b>0.9</b>	110
Basic chemicals	0.1	0.0	0.2	0.2	<b>0.9</b>	26
Other construction	1.0	0.9	0.8	1.0	<b>0.9</b>	378
Personal services	0.7	0.6	0.8	0.8	<b>0.9</b>	299
Rail & other transport	1.2	1.5	1.5	1.6	<b>0.8</b>	57
Forestry and logging	0.3	0.3	0.1	0.3	<b>0.7</b>	19
Paints	0.1	0.0	0.2	0.0	<b>0.7</b>	13
Prefabricated buildings	0.0	0.0	0.0	0.0	<b>0.7</b>	7
Wholesale trade	0.6	0.6	0.7	0.7	<b>0.7</b>	661
Other food products	0.1	0.1	0.1	0.6	<b>0.6</b>	35
Ceramic products	0.2	0.3	0.1	0.4	<b>0.6</b>	12

## 2.4 SERVICE DELIVERY LEVELS

A benchmarking process for measuring the level of services in a region is to calculate for each industry the ratio between the population and the number employed in the particular service industry (known as a Population Employment Ratio – PER). This is a simple measure of the intensity of service provision in an area which can be compared with other regions and the whole State. This works best where the services are essentially local and not ‘exported’ to users from outside the region. A low PER is to be preferred to a high PER.

The service delivery levels are shown in Table 2-8. The overall level of service provision within Far West NSW is shown in the last line of that table. The Far West level for 2001 indicates a PER of 4.2 which is much

higher than the NSW level of 3.0. However, the level has improved considerably over the past decades as shown by the declining value.

**Table 2-8: Service Delivery (PER) Far West NSW**

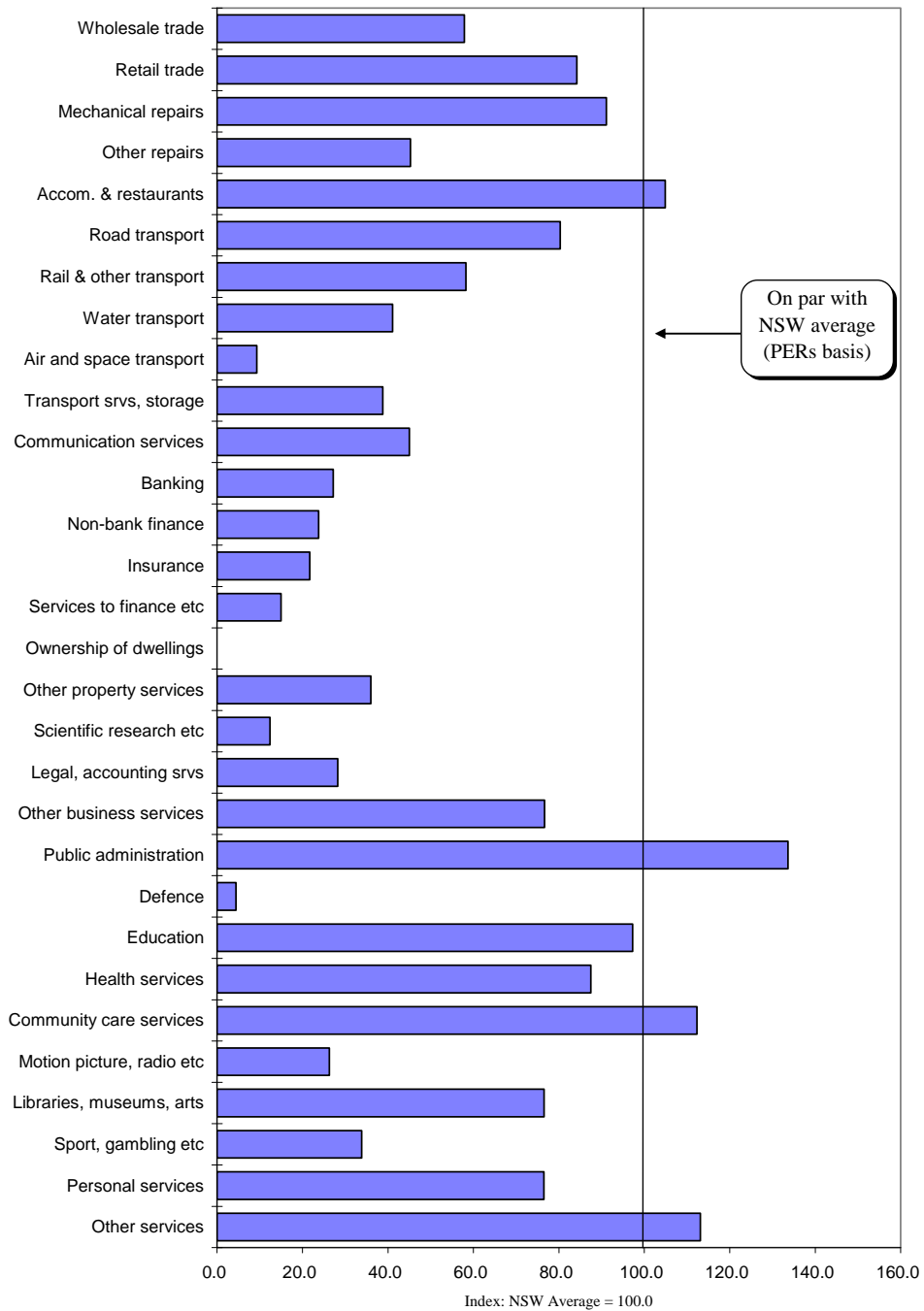
Service Sectors	Western Snowy					NSW		Change	
	1981	1986	1991	1996	2001	1996	2001	Local	2001
								2001 vs	NSW vs
								1996	local
Residential building	119	135	116	107	102	62	49	5	-53
Other construction	65	73	97	94	124	88	97	-30	-28
Wholesale trade	71	81	60	68	71	38	41	-3	-30
Retail trade	28	27	24	26	21	21	18	4	-3
Mechanical repairs	290	302	301	164	151	136	138	13	-13
Other repairs	2206	2317	1456	1972	1720	710	779	252	-941
Accom. & restaurants	52	52	43	42	41	47	43	1	2
Road transport	149	130	122	130	128	123	102	3	-25
Rail & other transport	130	126	189	348	827	372	482	-480	-345
Water transport	5326	7401	3087	14113	4464	1984	1834	9649	-2630
Air and space transport	2309	2452	2573	3881	3189	314	296	692	-2893
Transport srvs, storage	1158	632	833	632	551	175	214	81	-337
Communication services	127	140	178	237	250	112	112	-13	-137
Banking	175	173	187	254	418	104	114	-164	-304
Non-bank finance	4118	1632	1288	1557	1724	355	410	-167	-1315
Insurance	1142	863	813	1748	863	247	187	885	-676
Services to finance etc	2451	1912	1008	1870	1385	263	208	485	-1177
Ownership of dwellings	0	0	0	0	0	0	0	0	0
Other property services	1256	723	446	386	394	163	142	-8	-252
Scientific research etc	532	661	380	433	547	91	68	-113	-479
Legal, accounting srvs	339	406	288	260	187	58	53	73	-134
Other business services	320	461	214	143	97	91	74	46	-23
Public administration	59	51	55	60	53	70	71	8	18
Defence	5365	3346	3828	4859	7632	249	339	-2773	-7293
Education	42	41	41	37	34	35	33	3	-1
Health services	43	42	36	37	36	33	32	1	-5
Community care services	577	252	183	112	87	108	98	25	11
Motion picture, radio etc	580	1247	993	999	1204	369	316	-205	-887
Libraries, museums, arts	616	638	572	246	427	330	327	-182	-100
Sport, gambling etc	1075	587	722	887	618	236	209	269	-409
Personal services	308	330	212	189	157	133	120	32	-37
Other services	230	184	125	143	115	131	130	28	15
<b>TOTAL SERVICES</b> (excluding building & construction)	<b>5.3</b>	<b>5.1</b>	<b>4.5</b>	<b>4.5</b>	<b>4.2</b>	<b>3.2</b>	<b>3.0</b>	<b>0.4</b>	<b>-1.2</b>

The situation for each of the services compared to NSW in 2001 is shown in the last column where a positive value indicates that the level of service is better than in NSW. That occurs in only four sectors: accommodation and restaurants, public administration, community care and other services. Some of those reflect the poor social conditions in parts of the region or the need for special services. Accommodation and restaurants is a small indicator that there is some level of visitation to the region for that sector to be above the NSW average.

The Far West situation compared to NSW is shown in an index form in Figure 2-9. In this case, a value of 100 indicates parity between the Far West and the NSW levels of service and less than 100 indicates a lower level of service than that for NSW. This shows that those services with significant public funding, such as education, health and community care are around the NSW level. Personal services are generally better than those services that primarily support business activity (the sectors from transport to other business services). This pattern exists across most of inland NSW

and is an impediment to business development. Some forms of transport and maintenance services are at good levels.

**Figure 2-9: Service Delivery Index 2001 Far West NSW**



With a reversal of the population decline in some parts of the Far West, particularly in the mining centres, it is likely that there will be an increase in the level and range of services that are focused on households and to an extent business. However, many of the main business drivers such as mining companies are not likely to be substantial users of many locally provided business services.



The constraints on agricultural production from the dry conditions and other concerns about land and resource management are likely to lead to a contraction of population and services in some parts of the Far West. As of October 2006, that is already happening. Thus, there are two countervailing trends that are likely to result in little net improvement in services overall, but there could be some large redistribution of the provision of services within the large area of the Far West with some parts gaining and others losing.

## **2.5 INDUSTRY EMPLOYMENT ANALYSIS**

This section involves analyses to assess the performance of industries in the Far West region and benchmarking those industries against relevant NSW standards. The data used in the analyses are the detailed employment by residence data obtained from the Population Census. The data within this section can be used to highlight the structural changes that are occurring within the region.

A profile of employment by industry has been developed and used in a shift share analysis of the industries in the economy. Shift share analysis is a procedure for analysing the growth in each industry relative to total state growth and total industry growth. It is a form of benchmarking that identifies the contribution of each industry to economic growth.

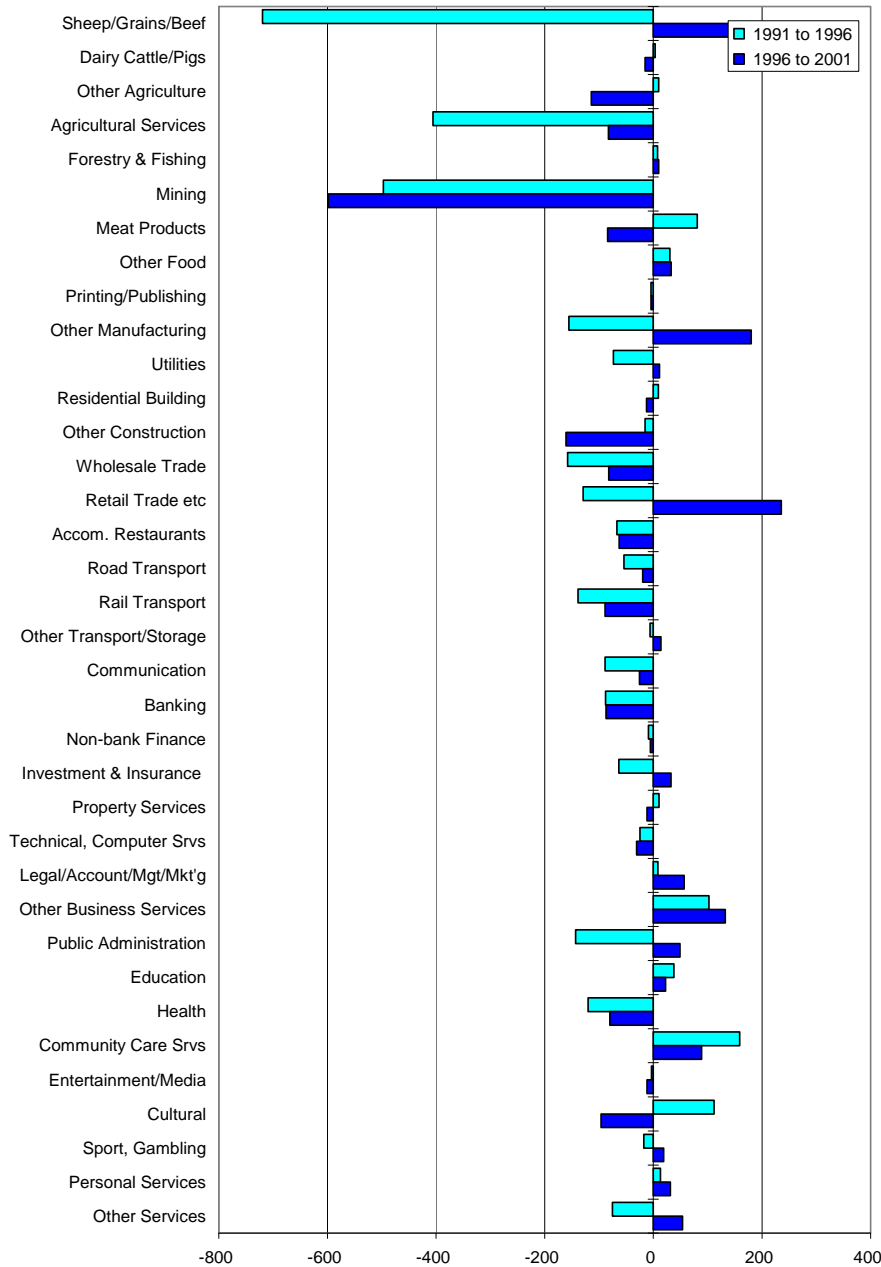
Industry growth is determined by a wide variety of factors including technological development, market access and growth, industry leadership and management and government policy. As a result different industries will experience different levels of growth. Shift share analysis is used to separate those factors that are local from those that are general to the industry. For example, a growing industry may achieve that growth by sharing in the overall NSW growth in that industry, or it may be growing because there are local competitive advantages that allow the local industry to increase its share of the NSW market.

The key characteristics of the industry structure in the Far West region were outlined earlier (see Figure 2-2). Broadacre agriculture, other agriculture, mining, retail trade, accommodation and restaurants, public administration, education, health and community care were key sectors in the Far West economy.

The changes in employment over the 1990s by each intercensal period are shown in Figure 2-10. In the period 1991 to 1996 employment in most industries declined along with the decline in the population. Notably large decreases were experienced in broadacre agriculture, agriculture services and mining. Increases were experienced in only a small number of industries; community care, other business services, cultural services and meat products. Many of the remaining industries experienced small

declines in employment and included reductions in the number employed in health and public administration.

**Figure 2-10: Total Change in Employment 1991 to 2001**



In the 1996 to 2001 period significant increases in employment were experienced within broadacre agriculture, other manufacturing (probably cotton ginning), retail trade, other business services and community care. Changes in employment in most other sectors were small and included both increases and decreases. There continued to be a large loss of jobs from the mining industry and small losses from some parts of agriculture and agricultural services. Overall, the situation in the second half of the 1990s was considerably better than the first half which experienced low

commodity prices and poor seasons to compound the impacts of the national recession.

Shift-share analysis is also used to separate out the effects of local changes from changes in the economy overall and in particular industries. This enables the analyst to assess whether there are particular competitive advantage factors operating in the local economy that are generating growth (overall or in particular industries) or whether the economy is just sharing in the growth of NSW or the industry as a whole. The overall pattern is shown in Table 2-9. This confirms that the second half of the 1990s was much more favourable for the Far West than the first half as indicated by the Total Change column. What is clearly shown is that the poor performance was mainly due to local factors. If the Far West had shared in the growth of the NSW economy, then it would have increased employment by 1,184 in the second half of the 1990s and the decrease in the first half would have been 369 (Total State column).

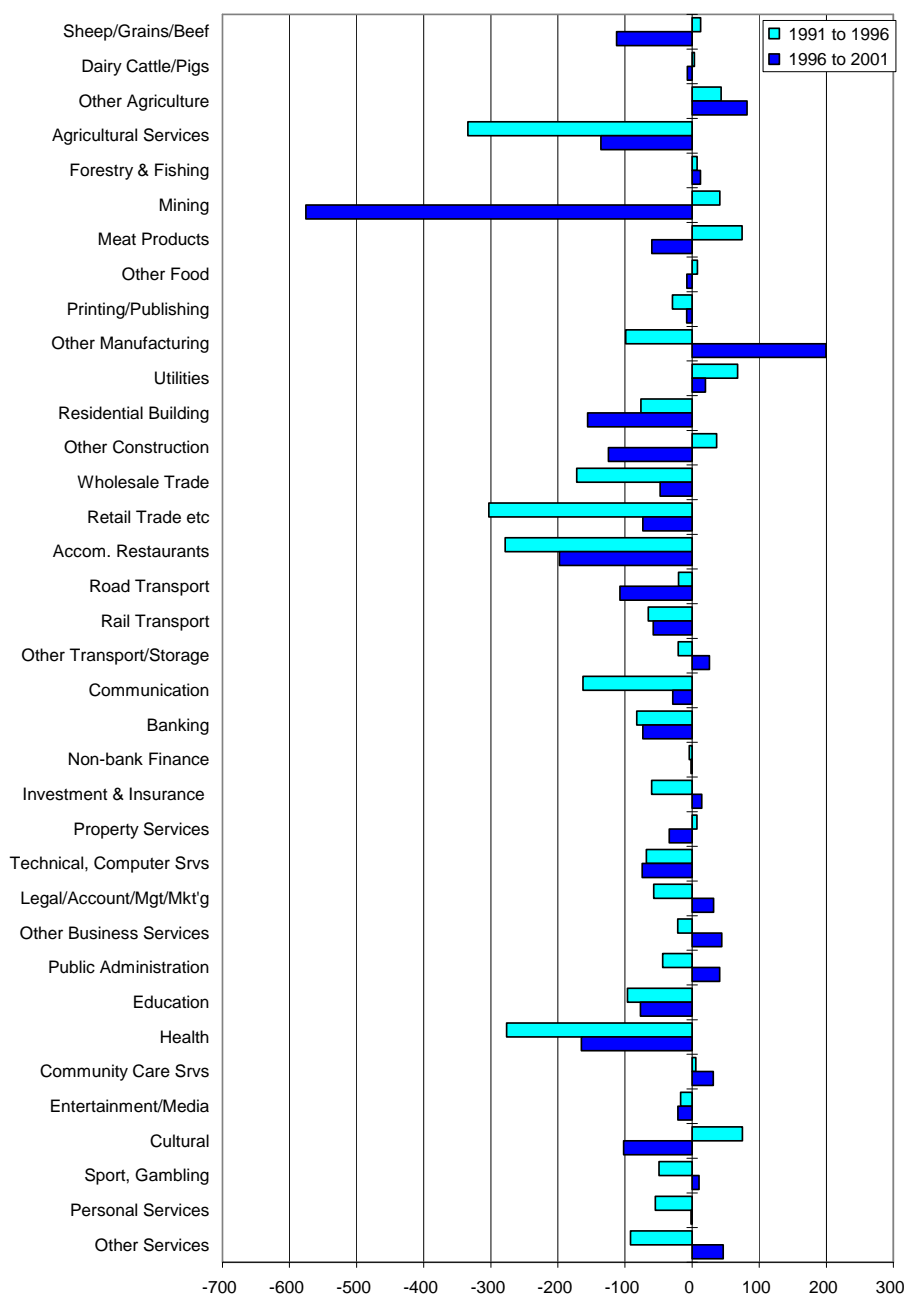
**Table 2-9: Shift-share Analysis Summary, 1991 to 2001**

	Component				Total Change No.
	State No.	Industry No.	Total State No.	Local No.	
1996 - 2001					
Positive Effects	1,385	915	2,300	932	<b>3,232</b>
Negative Effects	-	(1,116)	(1,116)	(2,623)	<b>(3,739)</b>
<b>Total Effects</b>	<b>1,385</b>	<b>(201)</b>	<b>1,184</b>	<b>(1,691)</b>	<b>(507)</b>
1991 - 1996					
Positive Effects	1,367	1,302	2,670	588	<b>3,258</b>
Negative Effects	-	(3,038)	(3,038)	(2,689)	<b>(5,728)</b>
<b>Total Effects</b>	<b>1,367</b>	<b>(1,736)</b>	<b>(369)</b>	<b>(2,101)</b>	<b>(2,470)</b>

The negative values under the Industry column are also significant. This indicates that the structure of the Far West economy is one which has a large share of industries that were growing slowly in NSW in the 1990s. That would include the mining industry and some parts of agriculture. However, the value is much less in the 1996-2001 period when the composition of industries is much closer to the NSW composition in terms of the high and low growth industries. (High growth industries are those that are growing faster than the average and vice-versa.)

The changes in employment noted above for the 1990s can be considered on an industry basis as shown in Figure 2-11. This shows the local effect of changes in employment relative to a zero change represented by the "0" line. Industries to the left of the "0" line indicates that the industry did not grow as quickly as the industry at the NSW level, so that this regional industry lost share of the NSW industry. An industry to the right of the "0" is indicative of an increase in the share of the NSW industry. This information can be interpreted as a general indicator of the competitive advantage of the industry in the Far West region relative to the industry in NSW.

**Figure 2-11: Local Influence on Employment Change 1991 to 2001**



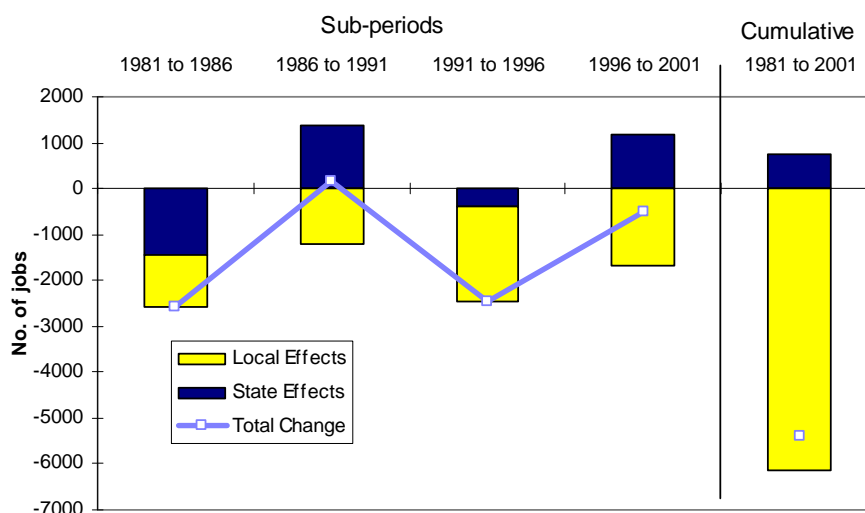
The local factors in the Far West region are strongly negative over 1991 to 1996 as indicated in Table 2-9. That translates into negative local factors over most industries. The notable industries to suffer a loss due to local factors were agriculture services, wholesale trade, retail trade, accommodation and restaurants, communications and health. Many of these industries are linked to trends in population and household income. There were few positive local effects in the 1991 to 1996 period with other agriculture, mining, utilities, other construction, meat products and cultural services were the only industries to experience a gain.

The loss experienced in the early 1990s continued into the 1996 to 2001 period. A number of dominant industries within the region experienced

large losses during the 1996 to 2001 period, including broadacre agriculture, agriculture services, mining, building and construction, and key service industries including accommodation and restaurants, education and health. The few small gains accrued in other agriculture (horticulture), other manufacturing (cotton ginning), public administration and some business services.

A two-decade perspective on the development of the Far West economy is provided in Figure 2-12. Over this period there was a net loss in jobs of over 6,000 relative to a situation where the region shared in NSW growth. The first half of each decade included major job losses. The losses were lower in the second half of both decades. The dependence on agriculture and mining were critical local factors generating these trends. In the 2000s, it seems likely that there will be a build up of mining reversing a long-term trend. In agriculture, changes in water policy may be the critical factor that will limit future growth and may even reverse some of the past growth in the production of irrigated crops.

**Figure 2-12: Shift-share Analysis Summary 1981 to 2001**



## 2.6 INPUT-OUTPUT TABLES

The input-output table for the Far West region for 2005-06 is shown in an aggregated form in Table 2-10 and in Figure 2-13. The table was developed first for 2000-01 using the 2001 Population Census data. It is then projected forward to 2005-06 using estimates of employment growth for each industry, and allowing for an increase in labour productivity of 1.5 per cent per year.

Between 2001 and 2006, the employment has been estimated to increase by 0.9 per cent per year. This represents a turnaround relative to the previous two decades when employment fell at 1.3 per cent per year and only in the

1986 to 1991 period was there any increase. The growth has been built around the following assumptions:

- Employment in agriculture would remain around the same level as in 2001 or decline slightly depending on the industry. The past decades have involved some employment growth based around the development of intensive irrigation enterprises in parts of the region.
- Growth in the mining industry based on changes in ownership of mines in the region, the delineation of new deposits and higher commodity prices in recent years. There is a growing level of activity but the timing is uncertain and to 2006 a 15 per cent increase in employment has been included (about 150 people).
- Growth in a range of services both business and personal associated with the turnaround in employment and population, continued growth in the overall economy and rising confidence among the communities that the worst is over. The latter may be dissipating in late 2006 under the growing drought situation and concerns about the availability and access to water.

**Table 2-10: Aggregated Input-Output Table, Far West 2005-06**

	Ag Forestry Fishing	Mining	Manufacturing	Utilities	Building	Trade Accommodatio n	Business Services	Public Personal Services	TOTAL	H-hold Exp	O.F.D	Exports	Total
Ag/Forest/Fish	70260	356	11468	16	186	3641	261	1236	87424	14288	17742	524118	643572
Mining	229	60155	8861	960	709	292	169	415	71791	187	10660	821193	903832
Manufacturing	7796	21207	23038	940	6969	17609	5727	4810	88097	28726	8346	79255	204424
Utilities	6928	16171	2282	9184	126	3748	3063	2971	44474	19968	2500	22261	89202
Building	826	11914	17	42	49	681	2865	362	16756	0	93684	0	110440
Trade/Accommodatic	35436	31432	8283	2759	5929	27158	31787	14403	157186	270970	23889	84566	536611
Business Svcs	34702	38675	12975	4107	6978	67197	53946	32442	251023	234050	25262	82014	592348
Public/Personal Svcs	2172	6001	1338	546	315	6661	8020	16407	41461	130073	308285	35604	515423
<b>TOTAL</b>	<b>158349</b>	<b>185912</b>	<b>68261</b>	<b>18555</b>	<b>21263</b>	<b>126986</b>	<b>105838</b>	<b>73046</b>	<b>758212</b>	<b>698262</b>	<b>490367</b>	<b>1649010</b>	<b>3595851</b>
H-hold Income	148492	95233	34922	14437	32051	107947	58578	200827	692487	0	0		692487
O.V.A.	204711	258926	29916	41482	20897	127192	307531	146591	1137247	195846	23202		1356295
Imports	132019	363760	71324	14728	36229	174486	120401	94958	1007904	410896	176122		1594923
<b>TOTAL</b>	<b>643572</b>	<b>903832</b>	<b>204424</b>	<b>89202</b>	<b>110440</b>	<b>536611</b>	<b>592348</b>	<b>515423</b>	<b>3595851</b>	<b>1305004</b>	<b>689691</b>	<b>1649010</b>	<b>7239557</b>
Employment	3987	1301	1081	292	921	4667	2163	5429	19841				

The key characteristics of the Far West economy in 2006 were:

Gross Regional Product (GRP)	\$2,049m
Gross Regional Product per person employed	\$103,261
Exports from the Far West	\$1,649m
Imports to the Far West	\$1,595m
Number employed	19,841
Average earnings from employment	\$34,902
Household income from employment	\$692m

Household expenditure \$1,305m

These estimates provide some important information about the structure of the regional economy in comparison with State and National economies that are discussed below. This region represents 0.9 per cent of the NSW economy.

Small economies generally have a much lower level of industry diversification than larger economies. As a result, the regional economies are normally more dependent on accessing extra-regional markets for the products that they produce and the supplies that they need than do large economies such as NSW. For the Far West, the level of exports is very high and is equivalent to 80 per cent of GRP. There is also a high level of imports given that there is limited capacity to supply many of the goods and materials needed by businesses and households from local sources.

The main industries rank relatively highly in terms of output per employee boosted by the high outputs from mining and large-scale irrigated agriculture projects. Average earnings also tend to be relatively high in this region and reflect the high labour productivity of the key industries.

There is also a large gap between the earnings of households from employment and the spending of households. The difference is made up by net income from government benefits less taxes, earnings from own operated businesses and other investments, the imputed value of owner household rent, and changes in net borrowings. The household earnings from employment shown in Table 2-10 for 2005-06 is consistent with the earnings for households shown for 2000-01 in Table 2-4, although the improved economic conditions from 2001 to 2006 may not be fully captured in the projections to 2006. The extent of the difference between employment earnings and household expenditure remains large. In the absence of more recent data, that level of expenditure for households is conjectural, although for several years, aggregate household expenditure in Australia has been growing much more rapidly than earnings with consequent increases in household debt.

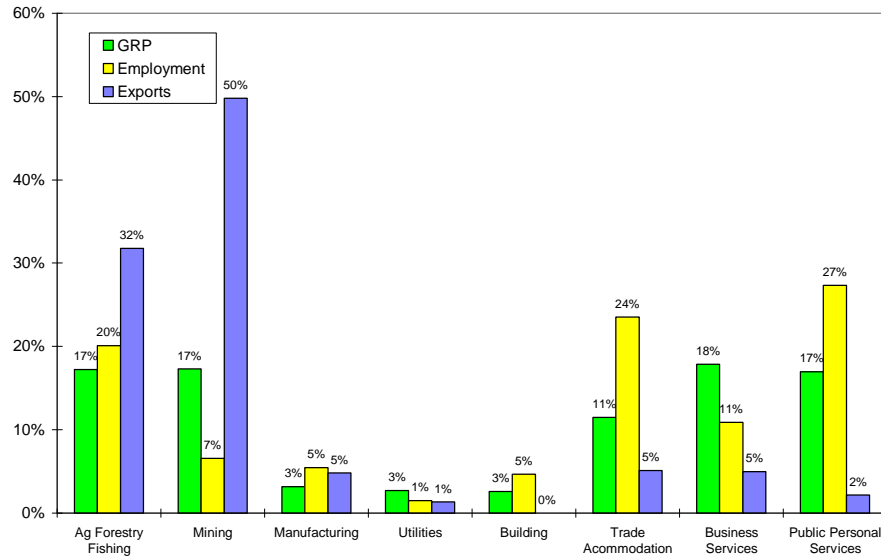
A comparison of the industry structure of the Far West region economy in 2005-06 and the NSW economy in 2000-01 is shown in Figure 2-13 and Figure 2-14, respectively.

The main differences in the industry structure are:

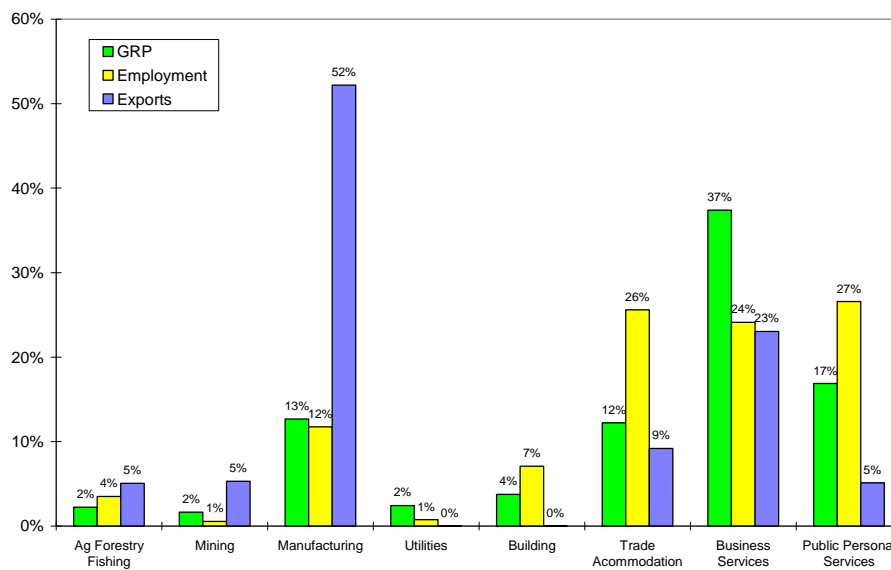
- Under all of the measures, the primary industries are dominant parts of the Far West economy but relatively small contributors to the NSW economy;
- Manufacturing is less important in the Far West, although there is often some manufacturing linked to mining activities such as the

production of concentrates. However, they are included in the mining sectors unless they are clearly separate activities;

**Figure 2-13: Aggregated Industry Structure, Far West, 2005-06**



**Figure 2-14: Aggregated Industry Structure, NSW, 2000-01**



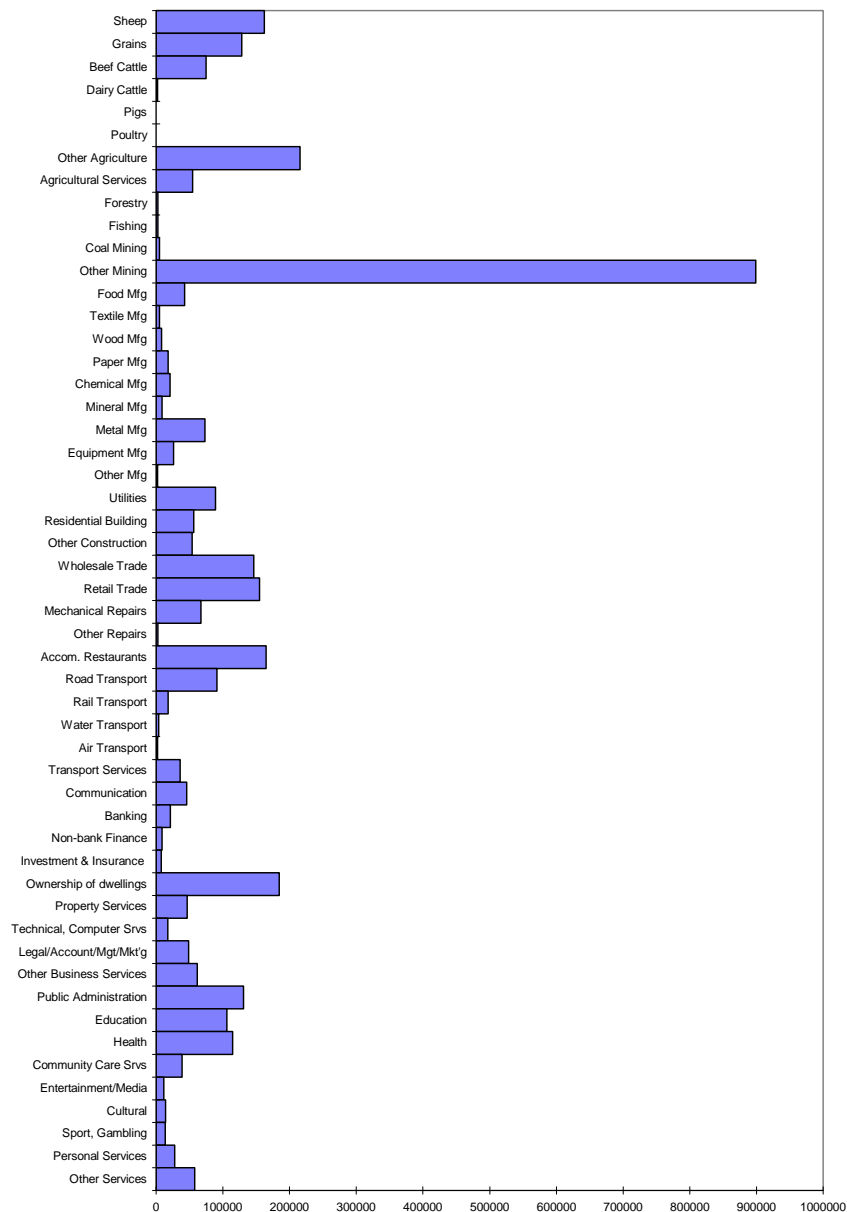
- Utilities tend to be more significant in the Far West attributable to the management of water and local power generation, while building and construction is less significant to the Far West as it has been a low growth economy;
- Trade and accommodation services and the public/personal services sectors tend to be at about the same share as for NSW;



- Business services are notably a much smaller share of the Far West economy relative to NSW.

A detailed industry composition of the Far West economy in 2006 is shown in Figure 2-15 through Figure 2-19. The charts highlight key characteristics of the economy.

**Figure 2-15: Industry Composition of Gross Output, 2000-01**

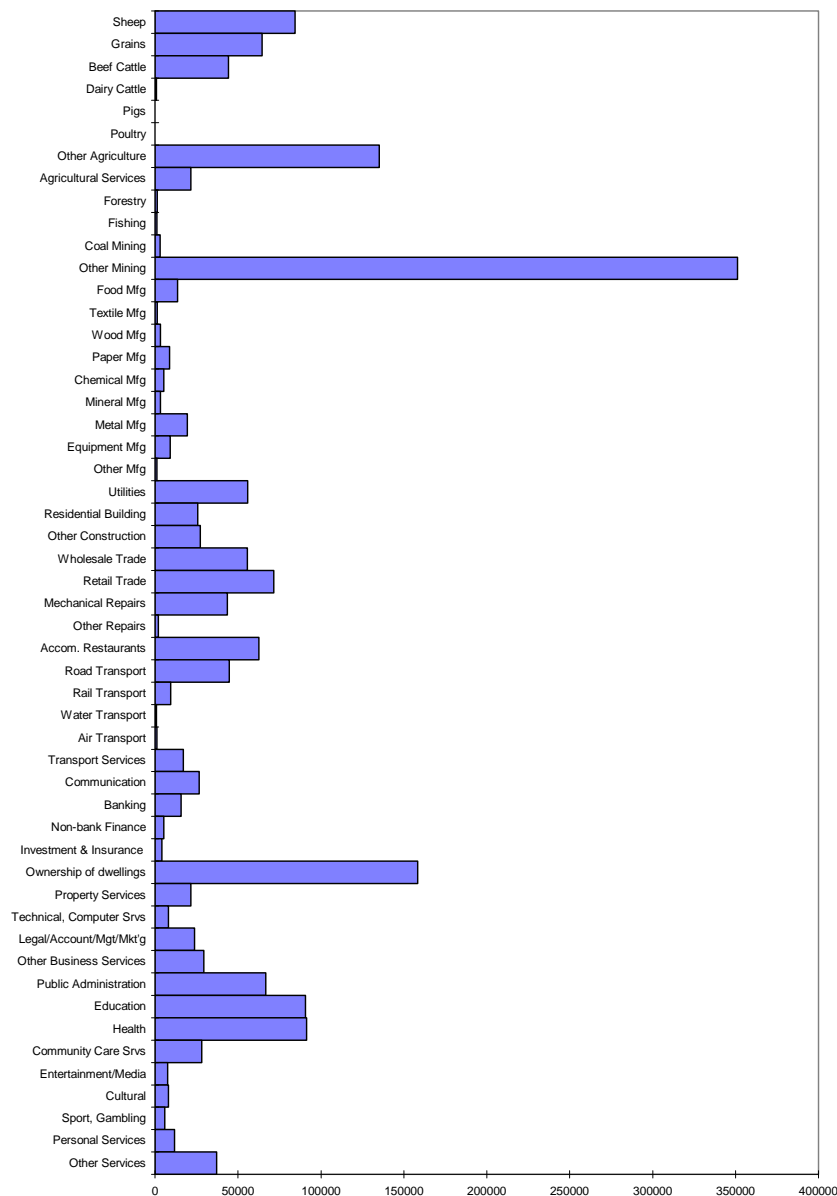


The industry composition of gross output for the Far West region is shown in Figure 2-15. This dominance of mining is evident from this chart and that dominance is set to expand further under current conditions for mineral products and new developments. The mining is concentrated in the areas around Broken Hill and in Cobar Shire and includes silver lead and zinc, copper and gold. A new mineral sands mining operation is under development at Pooncarie in Wentworth Shire.

The other notable production industries are agricultural that ranges from broadacre grazing and cereal cropping to a number of intensive activities included under the other agriculture sector. That includes the various horticultural, viticultural and other irrigated industries (such as cotton) that have developed in recent years. Almost all of these products are also exported. These industries also tend to nurture the agricultural services industry.

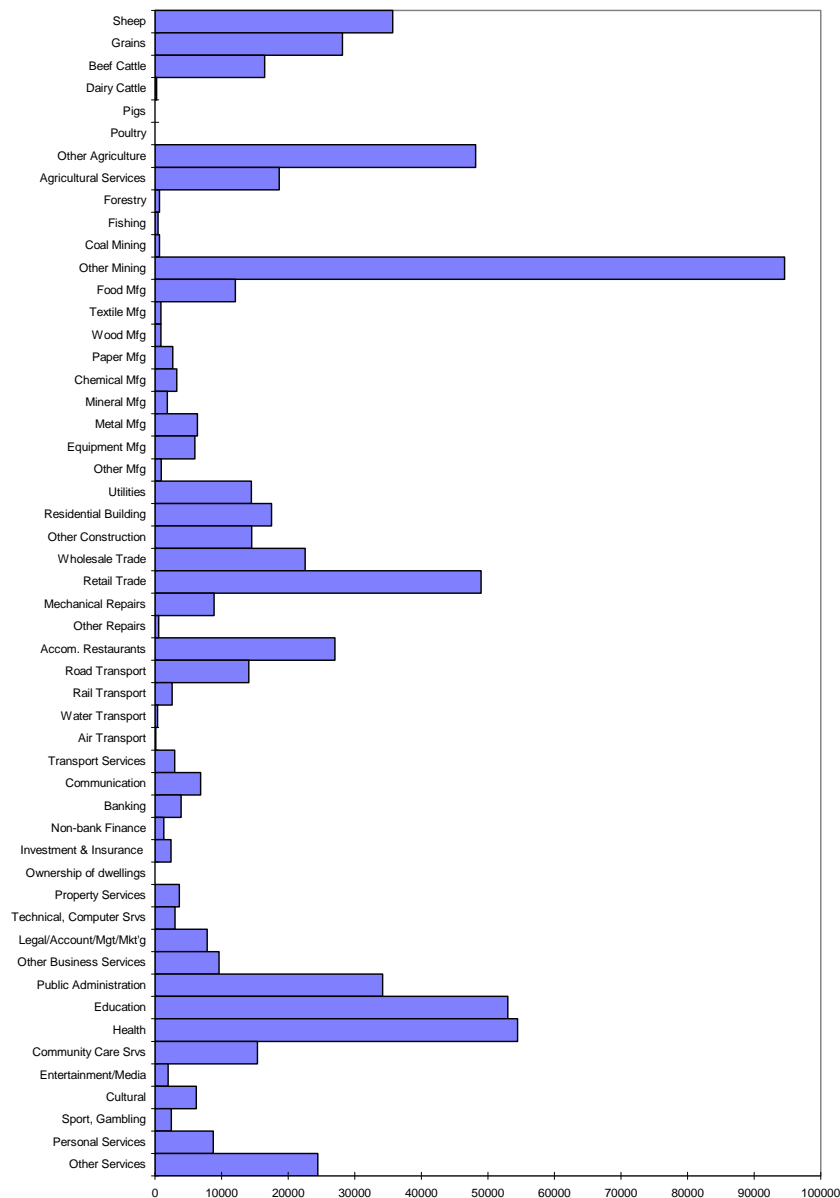
There is little that is exceptional in the structure of the services industries apart from the low levels for services targeted at businesses. The exception is road transport that is significant. Otherwise, most of the services are focused on providing for the needs of residents and visitors. That includes a significant amount associated with the provision of housing as shown by the ownership of dwellings sector.

**Figure 2-16: Industry Composition of GRP, 2000-01**



A similar pattern to the above is reflected in Figure 2-16 which shows the industry contributions to GRP. The ownership of dwellings is an important contributor in the form of the actual or imputed rent for dwellings. There is also high importance to those sectors that are publicly funded such as public administration, education, health and community care. The trade sectors and accommodation and restaurants are also notable.

**Figure 2-17; Industry Composition of Household Income, 2000-01**



The industry contribution to household income is shown in Figure 2-17. This measure reflects the number employed and the average earnings in the respective industries. The importance of some industries increases because of the high level of earnings (such as public administration, health and education) with a high proportion of employees holding professional qualifications. In other cases, the large number of employees leads to an

increase in importance of the industry such as retail trade. The primary industries are also substantial contributors to household income

**Figure 2-18: Industry Composition of Exports, 2000-01**

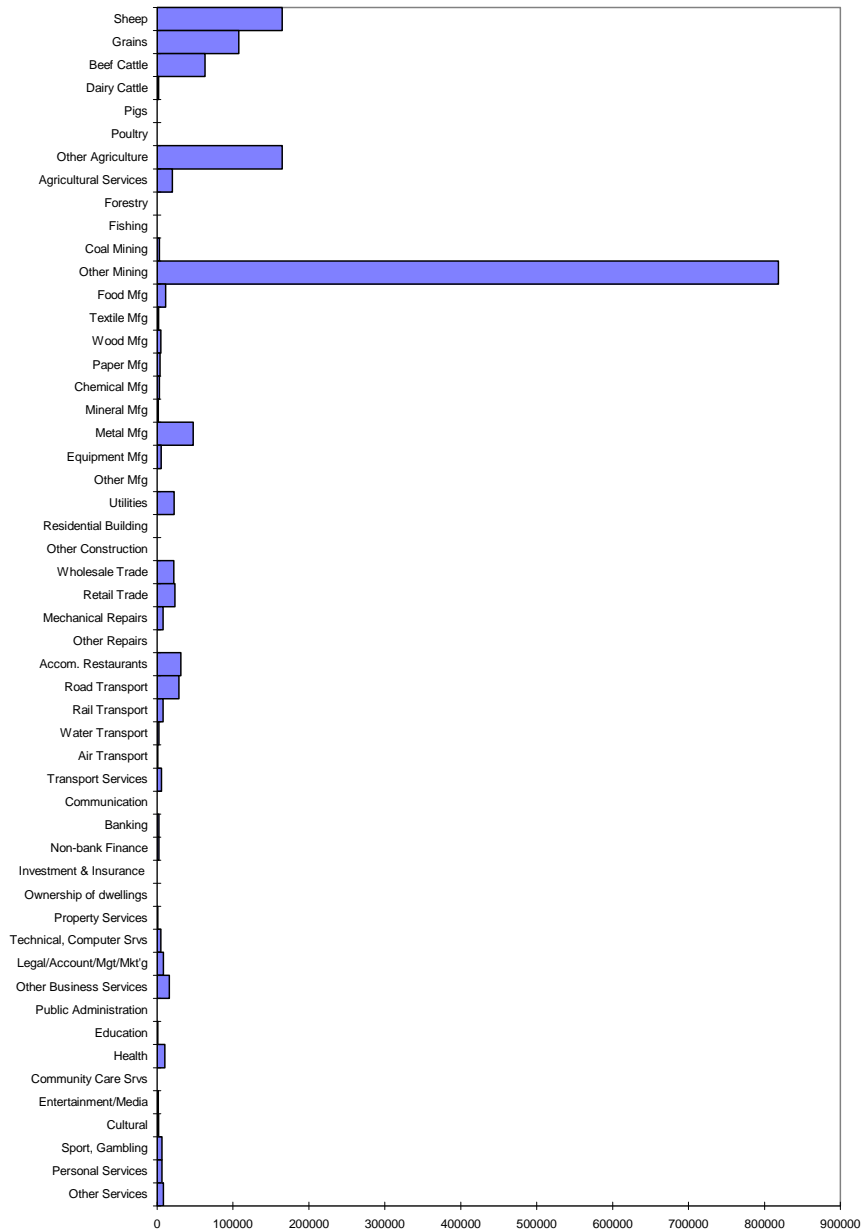
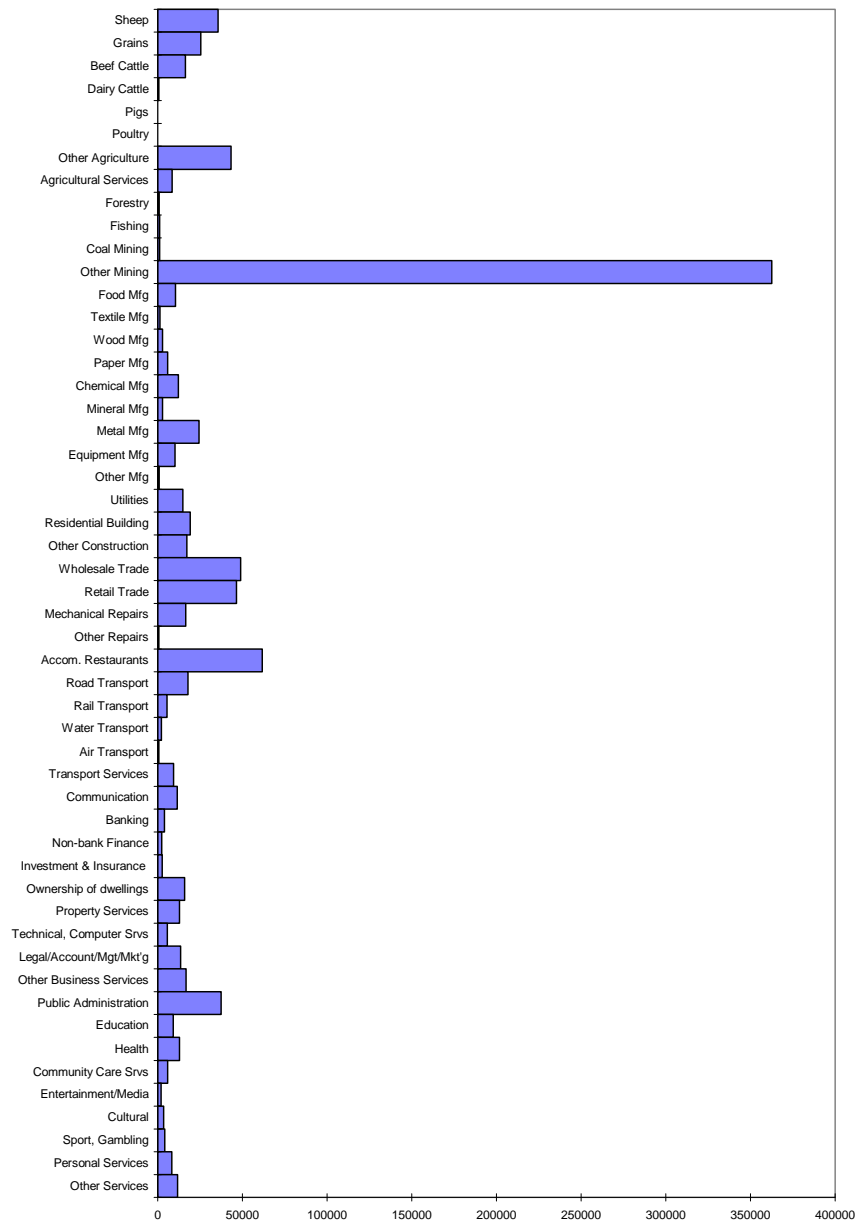


Figure 2-18 and Figure 2-19 indicate the relationship of the Far West to the rest of Australia and the world through the trade patterns. These data are difficult to develop and verify given the paucity of any specific data collections. As a result they are estimated from other sources and should be interpreted with some care. The main primary industries are the principal exporters and importers. That is to be expected as the users of their products are not located in the region (which is itself a very small market). Further, most of the materials used in their production have to be imported. The other main need for imports lies in the households. With modern transport systems, there are relatively few foods and other

household requirements produced locally so that most household goods are imported and the local expenditure is heavily focused on services.

**Figure 2-19: Industry Composition of Imports, 2000-01**



## 2.7 THE FAR WEST ECONOMY IN 2010-11

It is apparent from the previous discussion that the Far West economy is shaped by a few key factors that are largely beyond the control of local residents and organisations. The mining industry is an important component and its outlook has changed substantially with recent developments in world commodity markets. If that buoyancy continues for

the rest of this decade, then it is likely to stimulate further expansion of the mining operations in the Broken Hill and Cobar areas in particular.

In the case of the agricultural industries there is likely to be a composite of factors with an uncertain outcome up to the end of this decade. These include:

- Improved commodity prices that are linked to high global growth and higher prices for resources including oil;
- Growing world demand for animal proteins;
- Concerns about the availability and access to water for both agricultural and urban use;
- Issues related to climate-change effects and the recent trend to seasons that have been drier and hotter than usual.
- The development and impact of new policies and regulations related to the use of rural land; and
- Variations among the prices of agricultural commodities with livestock tending to improve while wine, wool and cotton are all in the doldrums in 2006.

The net result would seem to be one where the overall growth trend of agriculture in the Far West is likely to cease and may even decline. Within that change in trend, there will be variations among the various industries. These uncertainties will tend to offset some of the optimism that surrounds the mining industry developments and prospects.

The projected table to 2010-11 has been based on a continuation of modest overall growth at 0.9 per cent per year. There is little growth in agriculture, a continuing growth in beef cattle relative to other livestock and some growth in horticulture relative to other intensive agriculture industries. The mining industry expands steadily and there is a strengthening of growth in building and construction and the production of machinery, equipment and structures that supports mining and, to a lesser extent, agriculture. The main service industries continue to grow mainly in step with the expected growth in employment and the population.

The resultant projected input-output table for 2010-11 is shown in Table 2-11

**Table 2-11: Aggregated Input-output Table Far West 2010-11**

	Ag Forestry	Mining	Manufacturing	Utilities	Building	Trade Accommodation	Business Services	Public Personal Services	TOTAL	H-hold Exp	O.F.D	Exports	Total
Ag/Forest/Fish	77409	398	12156	16	233	4575	314	1423	96524	15015	22406	575743	709688
Mining	255	68234	9927	1056	886	330	188	470	81347	192	10982	952658	1045179
Manufacturing	9206	26753	26822	1014	9142	19825	6722	5587	105070	31466	9920	89304	235760
Utilities	7978	19856	2790	9537	163	4558	3820	3524	52225	21392	2367	18052	94036
Building	1015	15357	21	49	64	858	3352	436	21153	0	103663	13158	137974
Trade/Accommodati	37895	35255	9400	2882	7282	30553	36903	16174	176344	281975	23920	132288	614527
Business Svcs	39285	45888	15545	4503	9047	80291	66412	38377	299347	244788	25150	107561	676847
Public/Personal Svcs	2590	7388	1628	599	428	7572	10048	19803	50058	135910	349560	49858	585387
<b>TOTAL</b>	<b>175633</b>	<b>219130</b>	<b>78290</b>	<b>19656</b>	<b>27245</b>	<b>148563</b>	<b>127759</b>	<b>85793</b>	<b>882068</b>	<b>730739</b>	<b>547969</b>	<b>1938621</b>	<b>4099398</b>
H-hold Income	148416	99615	36734	14616	36268	112317	62779	207248	717993	0	0		717993
O.V.A.	241120	309560	38371	44519	29879	157459	348728	187226	1356862	203357	24057		1584277
Imports	144518	416873	82365	15246	44584	196189	137580	105120	1142474	422616	99497		1664588
<b>TOTAL</b>	<b>709688</b>	<b>1045179</b>	<b>235760</b>	<b>94036</b>	<b>137974</b>	<b>614527</b>	<b>676847</b>	<b>585387</b>	<b>4099398</b>	<b>1356712</b>	<b>671524</b>	<b>1938621</b>	<b>8066255</b>
Employment	3982	1360	1133	292	1042	4869	2342	5609	20629				

The main structural features of the projected Far West economy in 2010-11 are shown below. The values used are 2005-06 prices. Labour productivity has increased at 1.5 per cent per year and employment at 0.9 per cent per year. The increase relative to 2005-06 is shown in parenthesis.

Gross Regional Product (GRP)	\$2,302m (up 12 %)
Gross Regional Product per person employed	\$111,590 (up 11 %)
Exports from Far West	\$1,939m (up 18 %)
Imports to Far West	\$1,665m (up 4 %)
Number employed	20,629 (up 4 %)
Average earnings from employment	\$34,805 (no change)
Household income from employment	\$718m (up 4 %)
Household expenditure	\$1,358m (up 4 %)

Overall, these trends would represent a strengthening of the Far West economy with much of the improvement coming from productivity improvement. There is little wage growth as much of the employment gains are in the service industries where there is a lower level of earnings than in mining and agriculture.

## 2.8 SUMMARY

The Far West region economy includes a vast area with a high dependence on primary industries. The main centre is Broken Hill which has been developed around the mining industry and as a regional and administrative centre. The dependence on mining resulted in little growth over the 1980s and 1990s as mining was scaled down.

Agriculture has been the other main industry with extensive grazing of sheep and more recently cattle being the main activity over most of the

area. In recent times, agriculture has been a contributor to growth through increased cereal grain cropping using new crop management methods, and the development of pockets of intensive horticulture and cotton production along the main river systems. Those developments have led to growth of agricultural production although periodic drought has interrupted that trend.

For most of the last two decades, the overall population and employment has declined, including that of Broken Hill. In those circumstances, unemployment has tended to be above the national and NSW rate. The population is ageing, includes a significant indigenous component, and there is evidence than many young people leave the region at the conclusion of schooling. Some of these characteristics lead to the level of government benefits paid to households exceeding the tax that those households pay. However, the 2001 household income is 83 per cent of the NSW average, probably linked to high mining incomes and a non-drought year helping agricultural incomes.

In the 1990s, there were substantial losses of employment, especially when related to the high employment growth in NSW as a whole, particularly in the second half of the decade. The second half of the 1990s contained signs of a turnaround that has continued into the 2000s. Mineral prices improved, new intensive agricultural developments increased production along with improved commodity prices. This occurred in a context of strong national growth that would have had some spill over effects into the Far West.

The 2000s have been mainly drought affected and now there is the prospect of significant changes in water allocation and use that will constrain production from intensive agriculture. However, new mining developments are driving growth in selected locations including Broken Hill, Cobar and Pooncarie. As a result of those trends, the analytical models for the region have been based on a return to growth in employment of 0.9 per cent per year for the 2000s. That involves growth in mining production, steady agricultural production and some growth in the service industries. The critical assumptions are those that project a continuation of the buoyancy in mining industry and recovery from the current drought and water shortages that are impacting on agriculture.

Consideration not turns to the role played by the PAs and visitation to those PAs.



### **3 ECONOMIC IMPACT OF PROTECTED AREAS**

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The economic impact of PAs is comprised of two parts. First, there are the operating and maintenance costs associated with the PAs themselves. Second, there are the economic activities associated with the PAs. At this stage, that is primarily visitation for recreation, but a range of other activities may be considered. These may include apiary and grazing in some cases, while the collection of biological material for pharmaceutical purposes is likely to increase over time.

There are four steps involved in the economic impact analysis. They are:

1. The gathering of information on the primary activity. This includes two main categories:
  - a. The expenditures made on the PAs by the relevant government and related agencies. This is normally on-going operating expenditure including the maintenance of capital. Other capital development expenditure of a one-off nature is not usually included.
  - b. The estimation of the number of visitors to the PAs and the expenditures they make during the visit. This is usually only for visitors to the region and should include locals visiting the PAs as part of their normal recreation activities.
2. The formulation of the data into a form that complies with the conventions used in the input-output model. This includes making adjustments to the valuations used, the handling of indirect taxes and separating expenditures on imports from the locally supplied goods and services.
3. Application of the input-output model to estimate the flow-on effects of the expenditures. This involves the appropriate application of multipliers to the level of 'direct expenditure' gathered in the previous steps.
4. Preparation of appropriate tables to report the total impacts. This usually involves identifying the direct and flow-on impacts; indicating the main sectors or industries where the impacts occur; measuring the effects in terms of gross output, value added, household income and employment terms; and relating the total impacts to the overall size of the regional economy.

The following sections are structured around the above steps. The data used in these analyses have been compiled by the DEC.

## 3.1 IMPACTS OF PARK MANAGEMENT

### 3.1.1 Compiling the Data

The approach taken to estimating the economic impacts has been to prepare a specific sector in the input-output table representing PA operations and maintenance. The use of the park management expenditure and employment data provided by DEC in this way provides accurate estimates of the multipliers relating to the management of the PAs.

The compilation of the data involved taking into account the GST, allocating expenditures to the relevant ANZSIC industry/sector, adjusting margins and valuations where appropriate and determining import shares. The final step is to adjust the values to the year which corresponds to the year for the input-output tables. The resulting specification of the sector for the region is then added into the input-output table. The data were compiled for 2005-06 and projected data were calculated for 2010-11.

### 3.1.2 Park Management 2005-06

For 2005-06, park management in the Far West region amounted to \$5.8m. Wages and salaries accounted for 52 per cent of the total cost and local expenditure amounted to 13 per cent of that amount. Most of the materials and specialist services that were required were imported. For details of the expenditure allocation among the sectors see Attachment 2.

The impact results are presented in two parts. The multipliers are shown in Table 3-1 (see Attachment 1 for some background on input-output methods and the definition of the multipliers). These multipliers have been calculated from the input-output tables compiled for the Far West region

**Table 3-1: PA Management Multipliers 2005-06**

MULTIPLIERS	Flow-on Effects				TOTAL IMPACT	Type II
	Direct Effect	Production Induced	Consumption Induced	Total Flow- on		
<b>2005-06</b>						
Gross Output (\$)	1.000	0.150	0.450	0.600	<b>1.600</b>	1.600
Value-Added (\$)	0.734	0.071	0.262	0.333	<b>1.068</b>	1.454
Household Income (\$)	0.568	0.033	0.086	0.118	<b>0.686</b>	1.208
Employment (no./\$m)	13.2	1.0	3.1	4.1	<b>17.2</b>	1.312

The multipliers are consistent with those for most service sectors in small regions. A high proportion of park management expenditure is wages and salaries with little expenditure on locally supplied materials. The local capacity of regional suppliers tends to be focused on meeting the services

required by households. As a result, the multipliers are relatively low and the consumption-induced effects are more significant than the production-induced effects.

The estimated impacts are indicated in Table 3-2. PA management is estimated to contribute \$6.2m to GRP in total (value added). There is a contribution of approximately \$4m to household incomes for the 101 people employed. These are the measures most used as indicators of the contribution to the social and economic condition of the region.

**Table 3-2: Total Impact of PA Management 2005-06**

IMPACTS	Direct Effect	Flow-on Effects			TOTAL IMPACT
		Production Induced	Consumption Induced	Total Flow-on	
<b>2005-06</b>					
Gross Output (\$'000)	5,855	879	2,636	3,514	9,369
Value-Added (\$'000)	4,299	416	1,535	1,951	6,250
Household Income (\$'000)	3,323	192	501	692	4,015
Employment (no.)	77	6	18	24	101

The overall impact of the park management on the Far West region economy is shown in **Error! Reference source not found.** The total impact of park management is related to the whole economy to indicate the share of the park management activities and their flow-on effects on the whole economy.

**Table 3-3: PA Management Share of Economy, 2005-06**

Measure	2005-06		
	Whole Economy	Park Management Impact	Share of Economy (%)
Gross Output (\$'000)	3,595,851	9,369	0.26
Value Added (\$'000)	2,048,783	6,250	0.31
Household Income (\$'000)	692,487	4,015	0.58
Employment (no)	19,841	101	0.51

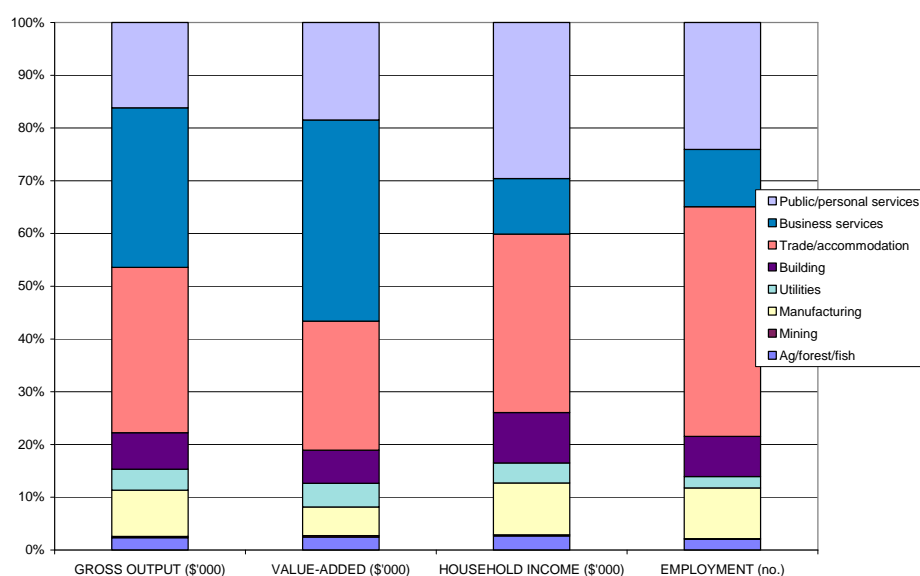
Park management makes a small contribution to the Far West economy at around 0.5 per cent. That is a result of PA management being relatively small with a small number of parks compared with other NSW regions. The Far West region has a mix of extensive and intensive activity that in total represents a significant economy within which, the role of park management is quite small.

The distribution of the flow-on impacts among the broad industry groups for the Far West is shown in Figure 3-1. The park management flow on effect is mostly associated with the needs of households as the consumption-induced effects are much larger than the production-induced effects. Most of the impacts are accruing to the trade and accommodation, business services and public/personal services groups. For the gross output and value added measures, the business services group is especially

prominent. This is because these measures include the flow-on effect to the ownership of dwellings as a service to households. (Note the importance of the ownership of dwellings to gross output shown in Figure 2-15.) Because the ownership of dwellings does not entail any employment or household income impacts, they do not appear in the flow-on effects for those measures.

These results reflect the high proportion of household expenditures made in the region for services rather than products. The groups that provide products (building, utilities, manufacturing, mining and agriculture) together share about 20 per cent of the flow-on impacts. That situation is unlikely to change much even with a reversal of population and employment trends. Further, with the vast Far West region, there will be centres such as Broken Hill where the impacts will be larger and span more industries, and other smaller centres that may capture only small impacts.

**Figure 3-1: Industry Distribution of Flow-on Impacts, Far West, 2005-06**



### 3.1.3 Projected Impact of Park Management 2010-01

A set of projected multipliers and economic impacts were estimated for 2010-11. These were based on the levels of expenditure and employment being similar to those that occurred in 2005-06. These estimates were then included into the 2010-11 input-output tables to replicate the above results for 2010-11. Those results are shown in Table 3-4 through Table 3-6.

The multipliers are similar to those for 2005-06 (Table 3-4) as was expected given that the direct expenditure has remained the same.

**Table 3-4: Park Management Multipliers 2010-11**

MULTIPLIERS	Direct Effect	Flow-on Effects			TOTAL IMPACT	Type II
		Production Induced	Consumption Induced	Total Flow-on		
<b>2010-11</b>						
Gross Output (\$)	1.000	0.151	0.448	0.599	<b>1.599</b>	1.599
Value-Added (\$)	0.734	0.071	0.260	0.332	<b>1.066</b>	1.452
Household Income (\$)	0.568	0.030	0.077	0.107	<b>0.675</b>	1.188
Employment (no./\$m)	13.2	0.9	2.8	3.7	<b>16.9</b>	1.282

The estimated impacts are indicated in Table 3-5. The total impacts of PA management differ in only minor ways to those for 2005-06. In terms of the share of the Far West economy, the shares have diminished a little primarily because there is some growth projected for the economy (Table 3-6).

**Table 3-5: Total Impact of Park Management 2010-11**

IMPACTS	Direct Effect	Flow-on Effects			TOTAL IMPACT
		Production Induced	Consumption Induced	Total Flow-on	
<b>2010-11 (\$2005-06)</b>					
Gross Output (\$'000)	5,855	884	2,623	3,507	9,361
Value-Added (\$'000)	4,299	418	1,524	1,943	6,242
Household Income (\$'000)	3,323	174	452	626	3,949
Employment (no.)	77	5	16	22	99

**Table 3-6: Park Management Share of Economy, 2010-11**

Measure	2010-11		
	Whole Economy	Park Management Impact	Share of Economy (%)
Gross Output (\$'000)	4,099,398	9,361	0.23
Value Added (\$'000)	2,302,269	6,242	0.27
Household Income (\$'000)	717,993	3,949	0.55
Employment (no)	20,629	99	0.48

## 3.2 IMPACTS OF VISITOR EXPENDITURE

### 3.2.1 Compiling the Data

The data on visitor expenditures has been compiled from data on the number of visitors to the PAs. It was estimated that there were 108,985 visitors to the PAs during 2005-06. It was estimated that five per cent of that number were local residents who are not included in the visitor impact estimates. Thus the impacts were based on 103,536 visitors to the PAs in the Far West region. Local visitors have not been included in the impact assessment as their activities are considered to be part of their normal household recreation activities.

An increase in visitor numbers to 2010-11 is built into the analysis. The number is increasing at 2.25 per cent per year. This growth is considered to be possible given that many of these PAs are in an area that has distinctive features that are not readily found elsewhere in NSW. The older demographics, additional retirees, improved access to the PAs and additional facilities are all factors that lie behind the assumed increase in visitation. This is one area of NSW where an increase appears likely in a general situation where there has been little growth in domestic visitation since the 2000 Olympics.

The compilation of the visitor expenditure data involves taking the categories of expenditure provided and allocating it to the relevant sectors in the input-output table. Those values are then adjusted for imports and indirect taxes to reach a set of final demand expenditures.

Total visitor expenditure for 2005-06 is shown in Table 3-7. Total expenditure in 2005-06 was estimated to be \$13.35m. Total expenditure per visitor per trip to a PA was estimated to be \$128.91 within the Far West. The nature of the region and the PAs mean that visitor expenditure is modest compared to other parts of NSW. There are few opportunities to make expenditures on a range of recreational and other items in these remote areas. Many visitors spent more outside the Far West region for travel, accommodation and other expenses. This reflects the distance that many visitors travelled to reach the Far West of NSW.

**Table 3-7: Summary of Visitor Expenditure**

Far West	Visitor Expenditure (\$m)	
	2005-06	2010-11
Accommodation inside park	0.98	1.09
Accommodation other	2.71	3.02
Prepared meals and drinks	1.89	2.11
Other shopping	2.14	2.39
Vehicle costs (Private)	4.14	4.63
Other transport	0.24	0.27
NPWD tours	0.34	0.38
Other tours	0.59	0.66
Entertainment	0.24	0.27
Other	0.08	0.09
<b>Total</b>	<b>13.35</b>	<b>14.92</b>

The data were compiled for 2005-06 and projected to 2010-11 on the basis that the number of visitors would increase by 2.25 per cent per year. The expenditure patterns would remain the same between 2005-06 and 2010-11. The results for 2010-11 are presented in 2005-06 values so the two sets of results are comparable in dollar terms. This indicates total expenditure of visitors rising to \$14.92m by 2010-11.

### 3.2.2 Visitor Expenditure Economic Impacts

A summary of the resulting estimates of park visitor expenditure is shown in Table 3-8. The total expenditure is estimated to be \$13.3m in 2005-06 of which the local component used to estimate flow-on impacts is \$8.7m. In 2010-11 the expenditure is estimated to be equal to \$14.9m with local expenditure increasing to \$9.7m. The allocation of this amount among the sectors is shown in Attachment 2.

**Table 3-8: Estimation of Local Direct Visitor Expenditure (\$'000)**

Year	Total			Local Expenditure
	Expenditure	Taxes	Imports	
<b>2006</b>	13,347	2,409	2,222	8,715
<b>2011</b>	14,918	2,693	2,496	9,728

The definitions and interpretation relating to economic impacts from the previous section also applies to these results. In this case, the impacts are not derived from the application of a single multiplier as in the case with PA management expenditures. This is a composite of multipliers that are applied to each of the expenditure items estimated from the initial data. The multipliers shown in Table 3-9 represent a weighted average multiplier for that particular set of visitor expenditures in the respective years.

**Table 3-9: Visitor Expenditure Multipliers**

MULTIPLIERS	Flow-on Effects				TOTAL IMPACT	Type II
	Direct Effect	Production Induced	Consumption Induced	Total Flow-on		
<b>2005-06</b>						
Gross Output (\$)	1.000	0.204	0.126	0.329	1.329	1.329
Value-Added (\$)	0.284	0.100	0.073	0.173	0.457	1.609
Household Income (\$)	0.129	0.039	0.024	0.063	0.191	1.485
Employment (no./\$m)	5.5	1.3	0.9	2.1	7.6	1.389
<b>2010-11</b>						
Gross Output (\$)	1.000	0.207	0.114	0.320	1.320	1.320
Value-Added (\$)	0.284	0.101	0.066	0.167	0.451	1.590
Household Income (\$)	0.117	0.035	0.020	0.055	0.171	1.470
Employment (no./\$m)	5.0	1.2	0.7	1.9	6.9	1.377

The multipliers are higher than those for PA management at around 1.4, but they are below those for regions near the coast or in the ranges. The production-induced multipliers are considerably larger than the consumption-induced multipliers. This reflects the high service content of the visitor expenditure that is supplied by local businesses compared with the purchase of materials which are mainly imported. The multipliers for 2010-11 are slightly smaller than those for 2005-06.

**Table 3-10: Economic Impacts of Visitor Expenditure**

IMPACTS	Flow-on Effects				TOTAL IMPACT
	Direct Effect	Production Induced	Consumption Induced	Total Flow-on	
<b>2005-06</b>					
Gross Output (\$'000)	13,347	2,721	1,675	4,396	17,743
Value-Added (\$'000)	3,793	1,331	977	2,308	6,101
Household Income (\$'000)	1,720	515	319	834	2,554
Employment (no.)	73	17	12	29	102
<b>2010-11</b>					
Gross Output (\$'000)	14,918	3,084	1,696	4,780	19,698
Value-Added (\$'000)	4,234	1,510	987	2,497	6,731
Household Income (\$'000)	1,739	524	293	817	2,556
Employment (no.)	74	17	11	28	102

The level of the economic impacts is shown in Table 3-10. The estimated values for the total impacts are similar to those for PA management. The impact on GRP is around \$6m and some 100 people are employed. The main difference is that the impact on household income is lower than for PA management. That is likely to arise from the greater significance of the flow-ons to production-induced impacts which are mostly services especially trade and accommodation. In those industries, average earnings are relatively low because of skill factors and the high proportion of jobs that are less than full time.

For 2010-11, the results are similar with a small increase in the contribution to GRP and most other measures remaining much the same.

The final step is to put these findings into the context of the overall economy. This is shown in a summary form in Table 3-11 where the total impacts are related to the total measure for the respective economies. In 2005-06 in GRP terms, visitors to national parks contributed 0.3 per cent and 0.51 per cent to employment. The share of visitor impact on the economy in 2010-11 is similar to the 2005-06 period as expected given that the increase in visitor numbers is small in the context of the overall economy.

**Table 3-11: Visitor Expenditure Share of Economy**

Measure	2005 06			2010-11		
	Whole Economy	Visitor Impact	Share of Economy (%)	Whole Economy	Visitor Impact	Share of Economy (%)
Gross Output (\$'000)	3,595,851	17,743	0.49	4,099,398	19,698	0.48
Value Added (\$'000)	2,048,783	6,101	0.30	2,302,269	6,731	0.29
Household Income (\$'000)	692,487	2,554	0.37	717,993	2,556	0.36
Employment (no)	19,841	102	0.51	20,629	102	0.50

### 3.2.3 Flow on Visitor Impacts

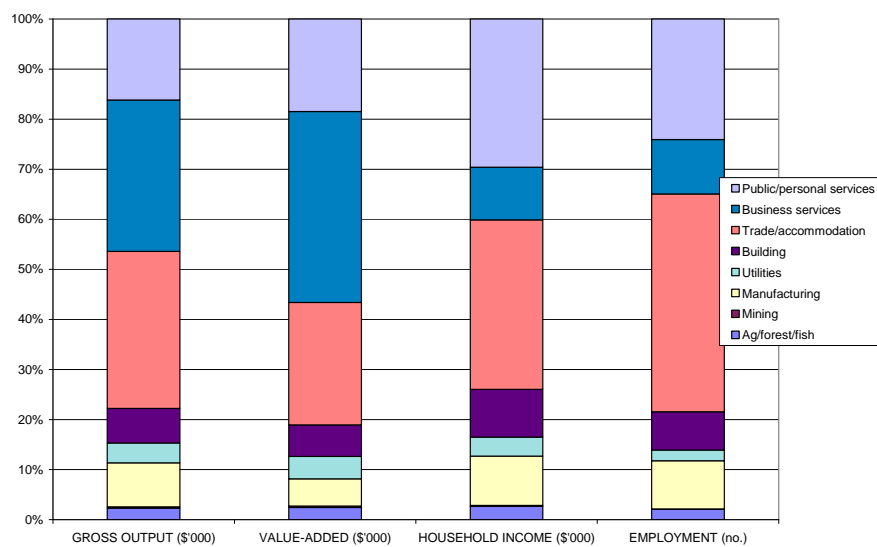
The industry composition of the flow-on effects is shown for both 2005-06 (Figure 3-2 and 2010-11 (Figure 3-3). These charts include all four



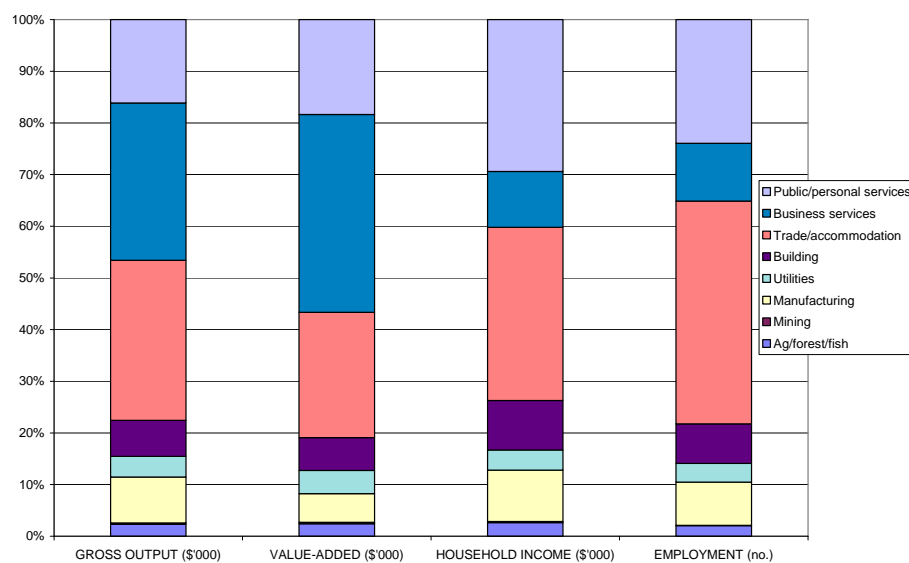
measures. There is a difference in the shares depending on the measures used. The shares attributed to business services are notably smaller for the household income and employment measures for the reasons noted earlier.

The results show that the flow-on effects are concentrated in the business services, trade and accommodation and public/personal services industry groups. Leaving aside the ownership of dwellings issue, the estimates for household income and employment convey the essential focus of the impacts. Most accrue to services and particularly to trade and accommodation and to a lesser extent to public and personal services. In all instances, there is little flow-on to the primary industries that are the drivers of the economy, or to the building, manufacturing or utility groups.

**Figure 3-2: Visitors flow-on impacts, Far West Region 2005-06**



**Figure 3-3: Visitor flow-on impacts, Far West Region 2010-11**



### **3.3 SUMMARY**

The Far West region has a small number of PAs. They are relatively remote from the main population centres and from the main centres in the Far West region. The localities provide little opportunity for visitors to make expenditures on other recreational activities, services and products that are possible in the coastal and highlands parts of NSW.

The total management of the PAs and the expenditure of visitors to the PAs are relatively small compared with other areas of NSW. In 2005-06, the total expenditure on PA management is \$5.8m and includes employment of 77 people. The expenditure of just over 100,000 visitors to the parks in the region amounts to \$13m. Those visitors expend at least that much outside the Far West region to get there and to stock up on provisions. These are not large numbers and are spread relatively thinly across the region. It is likely that most of the expenditures accrue in the major centres such as Broken Hill with small amounts accruing in the smaller centres.

The total impact of PA management and visitor expenditure is similar with each generating about \$6m of GRP and around 100 jobs. In terms of earnings for households PA management generates about \$4m and visitor expenditure about \$2.5m. Depending on the measure used, these amounts represent between 0.3 and 0.5 per cent of the economic activity.

The contribution to the economy is modest which reflects the small level of activity and the significant size of the Far West region economy. The substantial agricultural and mining operations do generate a substantial amount of economic activity although it is concentrated into a relatively small number of locations.

The forward projections include growth in visitor numbers at 2.25 per cent per year and growth in the economy of 0.9 per cent per year. By 2010-11, these trends do not change significantly the level of the impacts or the relative contribution to the Far West region economy.

## 4 SUMMARY AND CONCLUSIONS

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### 4.1 AN OVERVIEW OF THE STUDY AND REGION

The Parks and Wildlife Division of the Department of Environment and Conservation (DEC) requested a study to prepare economic information and an input-output table for the Far West NSW region. The models are then used to estimate the economic impact of park management expenditure and the expenditure of visitors on the region economy. The analysis is based on data for 2005-06 with projections to 2010-11.

The study region comprises the Western NSW pastoral region and consists of eight LGAs, i.e. Balranald, Brewarrina, Bogan, Cobar, Bourke, Central Darling, Wentworth, Broken Hill plus the Unincorporated Far West. The region contains eight National parks, 13 nature reserves, two historic sites, one State Conservation Area and one Aboriginal Area.

The Far West NSW region economy includes a vast area with a high dependence on primary industries. The main centre is Broken Hill which has been developed around the mining industry and as a regional and administrative centre. The dependence on mining resulted in little growth over the 1980s and 1990s as mining was scaled down.

Agriculture has been the other main industry with extensive grazing of sheep and more recently cattle being the main activity over most of the area. In recent times, agriculture has been a contributor to growth through increased cereal grain cropping using new crop management methods, and the development of pockets of intensive horticulture and cotton production along the main river systems. Those developments have led to growth of agricultural production although periodic drought has interrupted that trend.

For most of the last two decades, the overall population and employment has declined, including that of Broken Hill. In those circumstances, unemployment has tended to be above the national and NSW rate. The population is ageing, includes a significant indigenous component, and there is evidence that many young people leave the region at the conclusion of schooling. The 2001 household income is 83 per cent of the NSW average, probably linked to high mining incomes and a non-drought year helping agricultural incomes. Government welfare benefits account for around 20 per cent of household income.

In the 1990s, there were substantial losses of employment, especially in the first half. The second half of the 1990s contained signs of a turnaround that has continued into the 2000s. Mineral prices improved, new intensive agricultural developments increased production along with improved commodity prices. This occurred in a context of strong national growth that would have had some spill over effects into the Far West.

The 2000s have been mainly drought affected and now there is the prospect of significant changes in water allocation and use that will constrain production from intensive agriculture. However, new mining developments are driving growth in selected locations including Broken Hill, Cobar and Pooncarie. As a result of those trends, the analytical models for the region have been based on a return to growth in employment of 0.9 per cent per year for the 2000s. That involves growth in mining production, steady agricultural production and some growth in the service industries. The critical assumptions are those that project a continuation of the buoyancy in the mining industry and recovery from the current drought and water shortages that are impacting on agriculture.

The Far West NSW region generates a GRP of just over \$2,000m equivalent to about one per cent of the NSW economy. This involved the employment of almost 20,000 people with most located in Broken Hill. Overall the region exports more than it imports (rare among NSW regions) reflecting the substantial nature of the primary industries. Most of the non-primary industries are associated with the provision of services to primary industries and households. The region's needs for goods and materials are mainly imported.

## **4.2 THE IMPACT ANALYSIS**

The remoteness of the region means that visitation will be small relative to other coastal and highland areas. Visitors will also incur significant expenditures getting to the Far West and acquiring provisions for their visit. It is expected that there will be continued growth in visitor numbers which contrasts with the trends in NSW in the 2000s. This is based on the uniqueness of the region, the aging of the population and the improvement in access and facilities in the parks.

The DEC provided information on the expenditures for PA management and on the number of visitors to the PAs and the expenditures made by those visitors. Park management involved employing 77 people in 2006 and a total expenditure of \$5.8m. There were over 103,000 visitors to the PAs and their expenditure was estimated to be \$8.7m within the region. The input-output tables were used to estimate the flow-on impacts that are generated by these expenditures. A summary of the impacts is provided in the Table 4-1.

The total impact of PA management and visitor expenditure is similar with each generating about \$6m of GRP and around 100 jobs. In terms of earnings for households PA management generates about \$4m and visitor expenditure about \$2.5m. Depending on the measure used, these amounts represent between 0.3 and 0.5 per cent of the economic activity.

The contribution to the economy is modest which reflects the small level of activity and the significant size of the Far West region economy. The

substantial agricultural and mining operations do generate a substantial amount of economic activity although it is concentrated into a relatively small number of locations.

The forward projections include growth in visitor numbers at 2.25 per cent per year and growth in the economy of 0.9 per cent per year. By 2010-11, these trends do not change significantly the level of the impacts or the relative contribution to the Far West region economy.

**Table 4-1: Summary of Economic Impacts**

Category	Park Management		Visitors Expenditure	
	Level	Share	Level	Share
<b>2005-06</b>				
GRP (\$m)	6.25	0.31	6.10	0.30
Household income (\$m)	4.02	0.58	2.55	0.37
Employment (no.)	101	0.51	102	0.51
<b>2010-11</b>				
GRP (\$m)	6.24	0.27	6.73	0.29
Household income (\$m)	3.90	0.55	2.56	0.36
Employment (no.)	99	0.48	102	0.50

The Far West NSW region is of considerable significance by way of the vast area that it includes and the development issues that exist or are emerging. The region offers PAs in a remote and arid environment which is within reasonable distance of major cities. The aging demographic characteristic of the Australian population will likely lead to an increase in the number of people interested in visiting the region outside of the summer months. The improvements in access, facilities and the provision of a range of ways for visitors to access the PAs is likely to capture that interest.

A turnaround in the development of the Far West NSW region seems likely to assist the development of visitation to the region and the PAs, at least in those areas where growth is occurring. The mining industry is expected to be an important driver of this development in a number of centres.

The future of agriculture in the region is less certain and is linked fundamentally to the climate change issues. Agriculture has been a growth industry based around the use of water from the various river systems and linked to new farming methods that can use those water resources effectively. Without on-going access and availability of water for irrigation, agriculture seems likely to decline. That would not assist the further development of visitation to the region.

Although visitation to the region is likely to increase, it will remain a relatively small contributor to the Far West NSW region economy. The main drivers will be mining and agriculture, and if those industries are strong, then there will be spill over effects that would assist the growth of visitors to the region.

## ATTACHMENT 1 - INPUT OUTPUT METHODS

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Input-output models are an established part of the system of national accounts and are integral to the estimation of Gross National Product (GNP). (The detailed tables are published by the ABS (Cat No 5209.0) which includes details of the model, the classification system (shown later in this Attachment) and the relationship to the national accounts.) The input-output tables detail the interindustry trade that occurs among industries in an economy. The tables are constructed on a 'double entry' system that ensures that the supply of product from any industry has to be equal to the use of the products of that industry including any exports and imports and stock changes.

The input-output table has an important role in describing the economic structure of an economy, in particular the nature and intensity of interindustry trade. A subsistence economy where all business/household entities are self-sufficient will have no interindustry trade. Economic development involves an increase in the level of interindustry trade as businesses and households specialise in the production of goods and services and trade with other entities for the supplies that they need. The consistent development of input-output tables under a set of conventions makes it possible to compare these characteristics of an economy at different points of time and to compare economies in a consistent way. For this study, input-output tables are used to describe the economic structure of the regional economies in question.

The interindustry linkages are the basis of flow-on effects that occur when one industry has an impact on other industries. Those flow-on impacts will operate through:

- Changes in the demand for inputs by the affected industry, or
- Changes in their production that will impact on the downstream marketers, handlers and users of the product.

The model is structured in a way that it is mathematically possible to estimate those effects through the use of 'multipliers'. Larger multipliers indicate that there is a high level of interindustry trade among the affected industries. This study is an analytical application of input-output models to estimate the flow-on effects to the regional economy from the activities affected by the declaration of the MP and associated zoning plan.

The multipliers are calculated on the basis of a number of assumptions. The most important are:

- A linearity assumption that implies that any change has proportionate effects throughout the economy so that there are no substitutions among inputs and products. That applies to both inputs used in production and goods and services used in consumption. This assumption may not be critical over a range of types of change and

price changes where it takes time to adjust production systems. There is a general concern in that production systems involve a set of fixed costs that do not change in response to short-run adjustments in production. In consumption, the same effect occurs in relation to discretionary and non-discretionary expenditures on goods and services. The estimated multipliers reflect the long-run effects after all of the adjustments have occurred. In that case the linearity assumptions need to be viewed in a context of possible structural changes that may occur in the industry or economy.

- A set of homogeneity assumptions that mean all of the entities in the specified sectors are the same in terms of production technology, products produced, goods consumed, etc. This is probably the most critical assumption given that the modern economy is comprised of such a multitude of differentiated products and production systems. These are aggregated into 106 sectors or groups that are intended to be similar within those groups. As a result, there is an important initial task in any impact analysis to make an assessment of whether the ‘average’ structure that appears in the sector to which an industry belongs is appropriate for the analysis. If it is not, then a separate sector needs to be compiled.
- There is no consideration of market effects in the input-output model and all results are based on real changes in production of goods and services. There can be a range of price effects that may influence outcomes including changes in input prices, product prices, wages and interest rates. Exchange rate changes may also be an important factor in price changes. For most studies of regional industries, these price effects will not be critical issues because of the small size of those industries relative to national and sometimes international markets..

The use of input-output models is justified in a number of ways.

1. The input-output models can be readily compiled relative to other types of models that include market effects.
2. In assessing regional impacts, many of the industries that will be affected are likely to be a small proportion of the total market for that industry so that any price effects are likely to be small.
3. The analyses can be easily carried out and the tools can be used in ways that allow analysis of variations of the scope of the MP and the way the zoning is implemented.

## Constructing the Tables

The region tables are compiled using the GRIT method developed at the University of Queensland and widely applied in Australia for the construction of state and region tables. GRIT is a hybrid method that

involves the use of available data combined with computer-based computations to develop the detail of the table. For a description of the method, see West (1990). CARE has used variations of this method over two decades to estimate tables for NSW and for the compilation of tables for regions within NSW.

The major source of data is the ABS and particularly the population census that is the only source of detailed data on employment by industry. As a result, most tables are constructed for population census years, the most recent being for 2000-01. Projected tables for future years are generally built on projecting the most recent population census employment data into the future.

## The Multipliers

The multipliers calculated from the input-output tables and used in these analyses are shown as comprising the following:

- The **direct effect**, which is the gross output (total sales or the actual expenditures) of the product or service;
- The **production-induced effect**, which shows the flow-on effects generated through the purchase of goods and services to produce the good or service;
- The **consumption-induced effect**, which shows the flow-on effects that are generated through the payments of wages and salaries to households and the subsequent expenditure of those incomes of purchasing household goods and services;
- **Total Flow-on**, which is the sum of the production-induced and consumption-induced effects;
- **Total impact**, which is the sum of the direct and total flow-on effects; and
- **Type II** which is a ratio between the total impact and the direct effect.

All of these multipliers are what are described as “Final Demand Multipliers”. This means that they are calculated as if the direct effects are sales to final demand (to consumption, exports, capital formation or government consumption). The multipliers are used by applying the appropriate value to the gross output value to estimate the total impact. The multipliers should be interpreted as ‘indicating the flow-on effects generated by a \$1 change in gross output (in the case of employment it is \$1m).

The multipliers are calculated for the following measures:

**Gross output**, which is equivalent to business turnover;

**Value added**, which is the payment to labour and capital,



**Household income** is the wage and salary component of value added, but including an imputed wage for self-employed labour. (This approximates Gross Regional Product.)

**Employment**, which is the number employed unadjusted for hours worked or other factors.

## The ANZSIC Industry Classification

Sector Aggregation	107 IO Sectors
Sheep	Sheep for meat and wool
Grains	Grains inc. cereals, oilseeds, legumes
Beef Cattle	Beef cattle
Dairy Cattle	Dairy cattle
Pigs	Pigs
Poultry	Poultry for meat and eggs
Other Agriculture	Other agriculture, inc. nurseries, vegetables, fruit, cotton, tobacco, sugar cane, herbs, hay, goats, horses, deer, beekeeping, pet breeding.
Services to agriculture	Cotton ginning, shearing and wool classing, aerial ag services, contract harvesting, seed grading, land clearing; hunting
Forestry	Forestry and logging
Fishing	Commercial fishing and aquaculture
Mining	Coal; oil and gas
	Iron ores
	Non-ferrous metal ores
	Other mining inc. construction materials
	Services to mining inc. exploration
Food Mfg	Meat and meat products
	Dairy products
	Fruit and vegetable products
	Oils and fats
	Flour and cereal foods
	Bakery products
	Confectionery
	Other food products inc sugar, seafood, animal/bird feed, spices, herbs, savoury snacks, tea, honey - blended etc.
	Soft drinks, cordials, syrups
	Beer and malt
	Wine and spirits
	Tobacco products
	Textile Mfg
Textile products inc. blinds, awnings, curtains, sails, tents, carpets, rugs, ropes, nets, string, cord, bags, sacks etc.	
Knitting mill products	
Clothing	
Footwear	
Leather and leather products	
Wood Mfg	Sawmill products inc sawn timber, woodchips, dressed timber, plywood, veneer, fabricated boards
	Other wood products inc. structural components - windows, doors, trusses, frames, containers, pallets, cases, log preservation.
Printing/Publishing	Pulp, paper and paper-board
	Paper bags and products
	Printing; services to printing
	Publishing; recorded media etc
Chemical Mfg	Petroleum and coal products
	Basic chemicals inc. fertilisers, industrial gas/chemicals, synthetic resins, dyes, acid, salt, urea, fluoride, chlorine etc.
	Paints
	Pharmaceuticals etc inc. drugs, medicines, medicinal preparations
	Soap and detergents
	Cosmetics and toiletries
	Other chemical products inc. explosives, ink, glue, polish, cleaners
	Rubber products
	Plastic products
Mineral Mfg	Glass and glass products
	Ceramic products
	Cement, lime and concrete slurry

<b>Sector Aggregation</b>	<b>107 IO Sectors</b>
	Plaster; other concrete products
	Non-metallic mineral. products nec inc. abrasives, chalk, stone products, insulation materials, ag/hydrated/quick lime,
Metal Mfg	Iron and steel rolling, galvanising, casting, forging, pipes and tubes
	Basic non-ferrous metals inc alumina, aluminium, copper, silver, lead, zinc, gold, bronze, nickel, tin – smelting, refining, rolling, drawing, extruding, casting, forging
	Structural metal products inc girders, reo-mesh, architectural products, doors, gates, windows etc
	Sheet metal products inc. containers, guttering, downpipes, tanks
	Fabricated metal products inc. tools, general hardware, springs, wire, nails, nuts, bolts, screws, rivets, metal coating, non-ferrous pipe fittings, miscellaneous metal products
Mach/Equip Mfg	Motor vehicles and parts etc
	Ships and boats
	Railway equipment
	Aircraft
	Scientific etc equipment inc photographic, optical, medical, surgical
	Electronic equipment inc. computer, telecommunication, radio, TV
	Household appliances
	Other electrical equipment inc. cable, wire, batteries, lights, signs, fuses, electric motors, generators, welding equip. etc
	Agricultural, mining, construction machinery inc lifting/handling
	Other machinery and equipment inc. food processing, machine tool/part, pumps/compressors, commercial heating/cooling equip.
Other Mfg	Prefabricated buildings
	Sheet metal, wooden and upholstered furniture, mattresses, pillows, cushions (not rubber)
	Other manufacturing inc jewellery, toy, sporting goods, brushes, miscellaneous goods
Utilities	Electricity generation, distribution and supply
	Gas distribution and town gas mfg/dist. Via mains
	Water supply, sewerage and drainage services
Residential Building	Residential building
Other Construction	Non-residential building, Non-building construction inc. road/bridge, earthmoving, irrigation, mitigation
Wholesale Trade	Resale of new or used goods to business or institutional users.
Retail Trade	Resale of new or used goods to final consumers for personal or household consumption eg main-street establishments
Mechanical Repairs	Mechanical repairs
Other Repairs	Other repairs in. household equipment repairs etc
Accommodation Restaurants	Accommodation inc. hotels, motels, guest houses, youth hostels, student residences, camping grounds, caravan parks; cafes & restaurants; hospitality clubs, pubs, taverns and bars
Road Transport	Road freight and passenger transport
Rail Transport	Rail; pipeline; other inc. cable car, chair lift etc
Water Transport	International, coastal, inland water transport inc sea freight, cruise operation, boat charter, ferry.
Air Transport	Scheduled domestic and international air transport and non-scheduled air & space transport.
Transport Services	Services to road, water and air transport; travel agency, freight forwarding, customs agency; storage
Communication	Postal, courier, telecommunications
Banking	Reserve Bank; development, savings and trading banks
Non-bank Finance	Building societies, credit unions, money market dealers, deposit taking financiers, financial asset investors etc
Insurance	Insurance and services
	Services to finance and investment inc. brokers
Ownership of dwellings	Residential Property Operators

<b>Sector Aggregation</b>	<b>107 IO Sectors</b>
Property Services	Commercial property operators and developers, real estate agents, non-financial asset investors, machinery and equipment hiring and leasing
Technical, Computer Services	Scientific research, architectural, surveying, consultant engineering, other technical services, data processing, information storage and retrieval, computer maintenance and consultancy services.
Legal/Account/Mgt/Mkt'g	Legal, accounting, advertising, commercial art and display, market research, business administration and management services
Other business services	Employment placement, contract staff, secretarial, pest control, cleaning, packing, etc.
Public Administration	Federal, state, local government administration; justice
	Defence
Education	Education
Health	Hospitals, nursing homes, medical and health services; veterinary services
Community Care Services	Child care, accommodation for the aged, residential care services
Entertainment/Media	Motion picture, film and video, radio and television
Cultural	Libraries, museums, parks and gardens, arts
Sport, Gambling	Sport, gambling and other recreation services
Personal Services	Personal and household goods hiring; laundries, drycleaners; photographic studios and processing, funeral directors etc, gardening, hairdressing etc; private households employing staff
Other Services	Religious organisations; Interest groups - business and professional associations; Public order and safety

## ATTACHMENT 2 - SECTOR ALLOCATION OF EXPENDITURES

### Park Management

Sector	\$'000	Sector	\$'000
Sheep	0	Fabricated metal products	3
Grains	0	Motor vehicles and parts etc	0
Beef cattle	0	Ships and boats	3
Dairy cattle	0	Railway equipment	0
Pigs	0	Aircraft	5
Poultry	0	Scientific etc equipment	4
Other agriculture	0	Electronic equipment	0
Services to agric.; hunting	0	Household appliances	1
Forestry	0	Other electrical equipment	14
Commercial fishing	0	Agricultural, mining etc machinery	34
Coal; oil and gas	0	Other machinery and equipment	12
Iron ores	0	Prefabricated buildings	0
Non-ferrous metal ores	0	Furniture	1
Other mining	0	Other manufacturing	16
Services to mining	0	Electricity	32
Meat and meat products	0	Gas	4
Dairy products	0	Water, sewerage and drainage	7
Fruit and vegetable products	0	Residential building	3
Oils and fats	0	Other construction	230
Flour and cereal foods	0	Wholesale trade	48
Bakery products	0	Retail trade	1
Confectionery	0	Mechanical repairs	11
Other food products	0	Other repairs	1
Soft drinks, cordials, syrups	0	Accommodation, cafes & restaurants	57
Beer and malt	0	Road transport	32
Wine and spirits	0	Rail, pipeline, other transport	2
Tobacco products	0	Water transport	1
Textile fibres, yarns etc	0	Air and space transport	1
Textile products	0	Services to transport; storage	0
Knitting mill products	0	Communication services	3
Clothing	0	Banking	0
Footwear	0	Non-bank finance	0
Leather and leather products	0	Insurance	0
Sawmill products	0	Services to finance etc	0
Other wood products	5	Ownership of dwellings	0
Pulp, paper and paperboard	0	Other property services	0
Paper bags and products	0	Scientific research etc	7
Printing; services to printing	1	Legal, accounting etc services	0
Publishing; recorded media etc	2	Other business services	5
Petroleum and coal products	15	Government administration	109
Basic chemicals	0	Defence	0
Paints	7	Education	5
Pharmaceuticals etc	0	Health services	0
Soap and detergents	0	Community services	0
Cosmetics and toiletries	0	Motion picture, radio etc	1
Other chemical products	0	Libraries, museums, arts	0
Rubber products	0	Sport, gambling etc	0
Plastic products	0	Personal services	0
Glass and glass products	0	Other services	4
Ceramic products	0	<b>Local Expenditure</b>	<b>685</b>
Cement, lime and concrete slurry	0	H-Holds	3,323
Plaster; other concrete products	0	Taxes	976
Non-metallic min. products nec	0	Imports	730
Iron and steel	0	<b>TOTAL</b>	<b>5,714</b>
Basic non-ferrous metals etc	0		
Structural metal products	0		
Sheet metal products	0		

## Visitor Expenditure

Sector	Far West (\$'000)			Sector	Far West (\$'000)		
	All Visitors	Tourist	Locals		All Visitors	Tourist	Locals
Sheep	0	0	0	Fabricated metal products	4	4	0
Grains	0	0	0	Motor vehicles and parts etc	7	7	0
Beef cattle	0	0	0	Ships and boats	0	0	0
Dairy cattle	0	0	0	Railway equipment	0	0	0
Pigs	0	0	0	Aircraft	0	0	0
Poultry	0	0	0	Scientific etc equipment	0	0	0
Other agriculture	0	0	0	Electronic equipment	0	0	0
Services to agric.; hunting	0	0	0	Household appliances	0	0	0
Forestry	0	0	0	Other electrical equipment	0	0	0
Commercial fishing	0	0	0	Agricultural, mining etc machinery	0	0	0
Coal; oil and gas	0	0	0	Other machinery and equipment	0	0	0
Iron ores	0	0	0	Prefabricated buildings	0	0	0
Non-ferrous metal ores	0	0	0	Furniture	0	0	0
Other mining	0	0	0	Other manufacturing	14	14	1
Services to mining	0	0	0	Electricity	0	0	0
Meat and meat products	36	34	2	Gas	0	0	0
Dairy products	5	4	0	Water, sewerage and drainage	0	0	0
Fruit and vegetable products	6	5	0	Residential building	0	0	0
Oils and fats	0	0	0	Other construction	0	0	0
Flour and cereal foods	0	0	0	Wholesale trade	311	296	16
Bakery products	25	24	1	Retail trade	1,396	1,326	70
Confectionery	0	0	0	Mechanical repairs	792	753	40
Other food products	4	4	0	Other repairs	0	0	0
Soft drinks, cordials, syrups	7	6	0	Accommodation, cafes & restaurants	5,069	4,815	253
Beer and malt	0	0	0	Road transport	197	187	10
Wine and spirits	29	28	1	Rail, pipeline, other transport	27	26	1
Tobacco products	0	0	0	Water transport	0	0	0
Textile fibres, yarns etc	4	4	0	Air and space transport	2	2	0
Textile products	5	5	0	Services to transport; storage	12	12	1
Knitting mill products	0	0	0	Communication services	0	0	0
Clothing	5	4	0	Banking	0	0	0
Footwear	0	0	0	Non-bank finance	0	0	0
Leather and leather products	1	1	0	Insurance	0	0	0
Sawmill products	0	0	0	Services to finance etc	0	0	0
Other wood products	2	2	0	Ownership of dwellings	0	0	0
Pulp, paper and paperboard	0	0	0	Other property services	0	0	0
Paper bags and products	3	3	0	Scientific research etc	0	0	0
Printing; services to printing	0	0	0	Legal, accounting etc services	0	0	0
Publishing; recorded media etc	7	7	0	Other business services	0	0	0
Petroleum and coal products	0	0	0	Government administration	0	0	0
Basic chemicals	0	0	0	Defence	0	0	0
Paints	0	0	0	Education	0	0	0
Pharmaceuticals etc	2	1	0	Health services	23	22	1
Soap and detergents	0	0	0	Community services	0	0	0
Cosmetics and toiletries	0	0	0	Motion picture, radio etc	228	217	11
Other chemical products	0	0	0	Libraries, museums, arts	326	310	16
Rubber products	0	0	0	Sport, gambling etc	607	577	30
Plastic products	1	1	0	Personal services	15	15	1
Glass and glass products	0	0	0	Other services	0	0	0
Ceramic products	1	1	0	<b>TOTAL</b>	<b>9,174</b>	<b>8,715</b>	<b>459</b>
Cement, lime and concrete slurry	0	0	0	H-Holds	0	0	0
Plaster; other concrete products	0	0	0	Taxes	2,536	2,409	127
Non-metallic min. products nec	0	0	0	Imports	2,339	2,222	117
Iron and steel	0	0	0	<b>TOTAL</b>	<b>14,049</b>	<b>13,347</b>	<b>702</b>
Basic non-ferrous metals etc	0	0	0				
Structural metal products	0	0	0				
Sheet metal products	0	0	0				

## ATTACHMENT 3 – DISTRIBUTION OF FLOW-ON IMPACTS

### Park Management

2005-06

Aggregated Sector	Gross Output (\$'000)	Value Added (\$'000)	Household Income (\$'000)	Employment (no.)
Ag/forest/fish	81.26	47.73	18.33	0.50
Mining	9.31	5.04	1.39	0.02
Manufacturing	308.40	106.42	68.12	2.31
Utilities	139.41	87.55	26.46	0.52
Building	242.99	122.39	65.89	1.83
Trade/accommodation	1,101.71	477.07	234.42	10.44
Business services	1,062.81	744.38	72.87	2.60
Public/personal services	568.37	360.26	204.76	5.78
<b>TOTAL</b>	<b>3,514.25</b>	<b>1,950.84</b>	<b>692.24</b>	<b>23.99</b>

2010-11

Aggregated Sector	Gross Output (\$'000)	Value Added (\$'000)	Household Income (\$'000)	Employment (no.)
Ag/forest/fish	80.90	47.25	16.46	0.44
Mining	9.26	5.00	1.26	0.02
Manufacturing	311.94	107.60	62.42	1.81
Utilities	140.31	88.10	24.43	0.79
Building	243.82	122.78	59.90	1.66
Trade/accommodation	1,086.70	471.27	209.88	9.36
Business services	1,068.03	743.87	67.75	2.43
Public/personal services	565.88	356.94	184.01	5.20
<b>TOTAL</b>	<b>3,506.84</b>	<b>1,942.82</b>	<b>626.10</b>	<b>21.70</b>

### Visitor Impacts

2005-06

Aggregated Sector	Gross Output (\$'000)	Value Added (\$'000)	Household Income (\$'000)	Employment (no.)
Ag/forest/fish	297.29	172.17	65.78	1.77
Mining	18.24	9.97	2.80	0.04
Manufacturing	560.60	252.75	140.23	4.45
Utilities	176.10	49.44	33.42	0.65
Building	24.28	11.91	6.84	0.19
Trade/accommodation	1,114.46	497.22	217.54	9.29
Business services	1,716.65	1,000.47	187.94	7.24
Public/personal services	488.81	313.99	179.74	4.92
<b>TOTAL</b>	<b>4,396.41</b>	<b>2,307.92</b>	<b>834.29</b>	<b>28.57</b>

2010-11

Aggregated Sector	Gross Output (\$'000)	Value Added (\$'000)	Household Income (\$'000)	Employment (no.)
Ag/forest/fish	328.15	187.94	65.18	1.75
Mining	20.04	10.94	2.79	0.04
Manufacturing	600.62	276.89	135.36	4.32
Utilities	197.92	53.22	34.70	0.68
Building	29.13	14.32	7.40	0.21
Trade/accommodation	1,167.98	523.10	205.45	8.76
Business services	1,923.17	1,104.65	194.90	7.55
Public/personal services	513.23	326.19	171.43	4.70
<b>TOTAL</b>	<b>4,780.23</b>	<b>2,497.25</b>	<b>817.21</b>	<b>28.00</b>

## ATTACHMENT 4 – FAR WEST NSW RESERVES

Reserve Name	LGA	Total Visitors
Culgoa National Park	Brewarrina	200
Gundabooka National Park	Bourke	1,800
Kajuligah Nature Reserve	Central Darling	-
Kemendok Nature Reserve	Wentworth	10
Kinchega National Park	Central Darling	10,000
Ledknapper Nature Reserve	Bourke	100
Mallee Cliffs National Park	Wentworth	-
Morrison's Lake Nature Reserve	Central Darling	-
Mount Grenfell Historic Site	Cobar	1,000
Mungo National Park	Balranald	45,000
Mutawintji Historic Site	Unincorporated Area	1,500
Mutawintji National Park	Unincorporated Area	12,000
Mutawintji Nature Reserve	Unincorporated Area	-
Narran Lake Nature Reserve	Brewarrina	150
Nearie Lake Nature Reserve	Wentworth	-
Nocoleche Nature Reserve	Bourke, Unincorporated area	250
Nombinnie Nature Reserve	Cobar	10
Paroo-Darling National Park	Central Darling, Cobar	1,000
Paroo-Darling State Conservation Area	Central Darling	-
Pindera Downs Aboriginal Area	Unincorporated Area	-
Quanda Nature Reserve	Bogan	-
Round Hill Nature Reserve	Cobar	40
Sturt National Park	Unincorporated Area	35,000
Tarawi Nature Reserve	Wentworth	25
Yathong Nature Reserve	Cobar	900
<b>TOTAL VISITORS</b>		<b>108,985</b>

## REFERENCES

## DISCLAIMER

This report has been prepared using data and information provided by various agencies, organisations and individuals. The information has been verified where possible. The information in this draft report may be subject to change, amplification or further verification in the final report.

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