

TOURISM - Visitor Centre at the Region's iconic Karijini National Park.



PILBARA

Economic Perspective



SHIPPING - The ports in the Pilbara handle tonnages far in excess of other ports in the State.



LNG EXPORTS - The Pilbara Region produces all of Western Australia's liquefied natural gas (LNG).



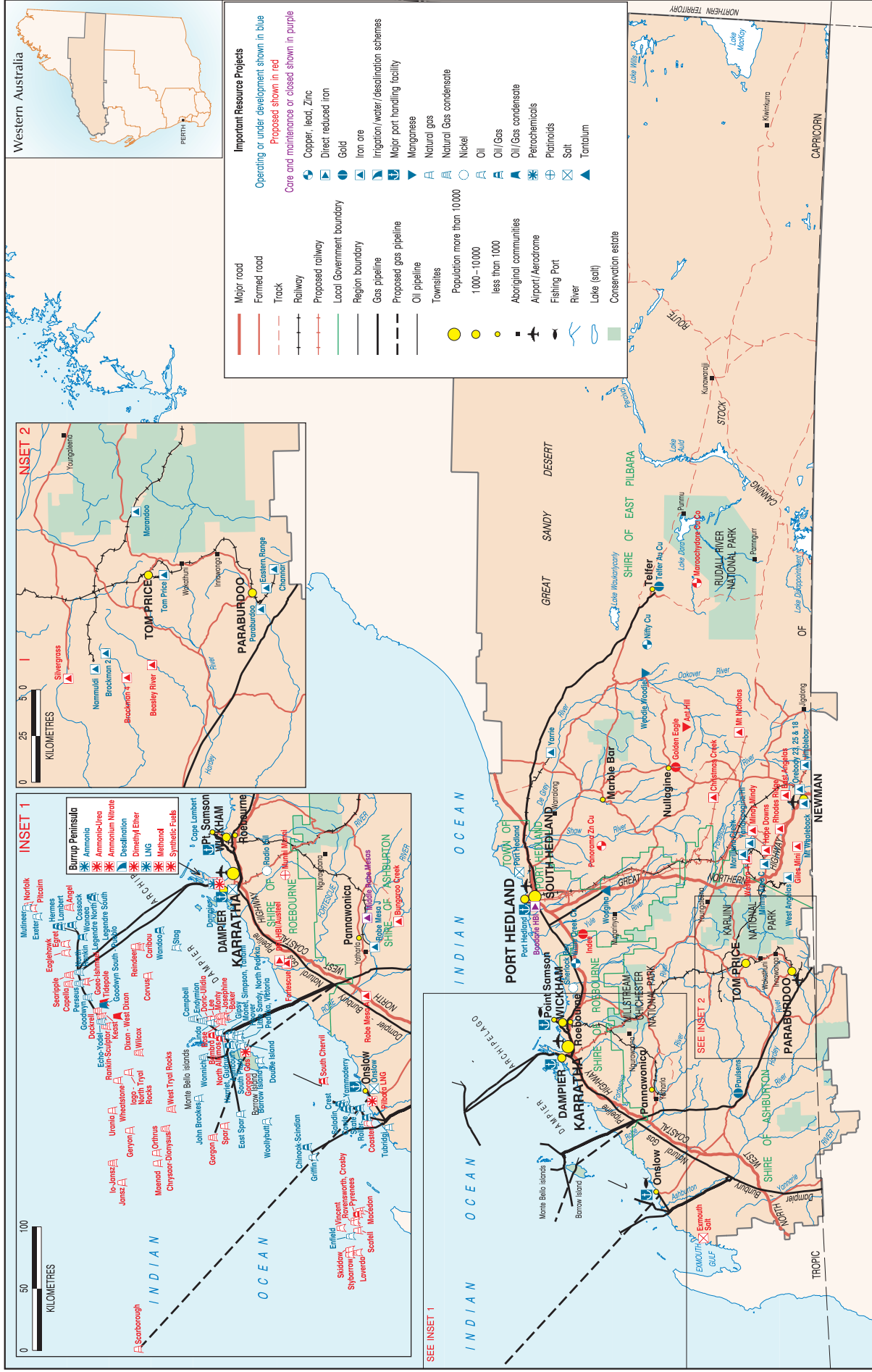
SALT HARVESTING - The Pilbara has the largest solar salt fields in Australia.



IRON ORE EXPORTS - The Pilbara Region produces more than 95 per cent of Australia's iron ore exports.



Department of Local Government
and Regional Development
Government of Western Australia



PILBARA REGION KEY FEATURES

FOREWORD



The Pilbara Economic Perspective was prepared by the Department of Local Government and Regional Development in conjunction with the Pilbara Development Commission, as one of a series of nine documents. Each document addresses a different non-metropolitan region of the State.

The Economic Perspectives are the core economic documents for the regions and provide a useful insight into regional Western Australia. Each document has been prepared in an easy-to-read format and provides the latest available information on population, labour force and employment, taxable income, tourism, fishing and aquaculture, agriculture, mining, construction, manufacturing, commerce, project investment, indigenous economic development and infrastructure. Each economic section contains a brief analysis and is supported by graphs to illustrate the trend over time.

The Pilbara Region is located in the north west of Western Australia, with landscapes ranging from the dry, arid western desert to the spectacular coastline of the Dampier Archipelago. Residents and visitors to the Region enjoy its many attractions, from the Karijini and Millstream National Parks to boating and snorkelling in the waters off its coast.

The Pilbara is one of the driving forces behind the Western Australia economy. Its abundant resources, ancient landscapes and cultural wealth make it an ideal place for people to work, live and visit. The Department of Local Government and Regional Development estimated the Pilbara's Gross Regional Product at \$4.8 billion in 2004/05.

The Region's economy is dominated by the mineral and petroleum industry. In 2004/05, production was valued at \$20.6 billion, equivalent to 62 per cent of the State's total. Service industry such as retail trade and associated industries such as manufacturing also contributed to the dynamic nature of the Pilbara's economy.

I invite you to read the Pilbara Economic Perspective in the knowledge you will find it an interesting and informative guide to economy activity in the Region.

A handwritten signature in black ink, appearing to read 'Jon Ford'.

Hon Jon Ford JP MLC

**MINISTER FOR LOCAL GOVERNMENT AND REGIONAL DEVELOPMENT;
FISHERIES; THE KIMBERLEY, PILBARA AND GASCOYNE.**

THE REGION

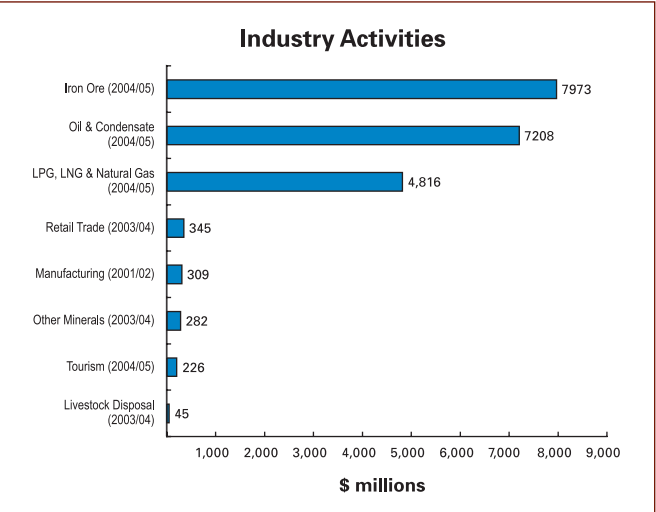
Defined by the Indian Ocean to the west and the Northern Territory border to the east, the Pilbara is Western Australia's second most northern region. The Kimberley Region lies to its north across the Great Sandy Desert and the Pilbara's southern reaches border the Gascoyne, Mid West and Goldfields-Esperance Regions. The Region covers a total area of 507,896 sq kms (including offshore islands).

The population totalled 39,282 people in 2005 with the majority residing in the western third of the Region. The eastern third is largely desert and is home to a small number of Indigenous people. There are four local government areas in the Region, the Shires of Ashburton, East Pilbara and Roebourne, and the Town of Port Hedland. The major town centres are Port Hedland, South Hedland and Karratha, with other important centres being Roebourne, Wickham, Point Samson, Dampier, Onslow, Pannawonica, Paraburdoo, Tom Price, Yandeyarra, Marble Bar, Newman, Jigalong and Nullagine.

The Pilbara came to national and international prominence during the 1960s with the development of the Region's extensive iron ore reserves. Today, the Pilbara economy is crucial to the State, providing two of the State's largest export revenue earners – iron ore and liquefied natural gas.

OVERVIEW

The Pilbara's economy is dominated by the mineral and petroleum industries and is considered to be the State's premier mining region. In 2004/05, the Pilbara contributed over 62 per cent of the value of Western Australia's mineral and petroleum production. The Department of Local Government and Regional Development estimated the Pilbara's Gross Regional Product was \$4.8 billion (indicative only) in 2004/05.



Note: Industry activities are based on value of production, turnover and expenditure, whereas Gross Regional Product is the value of final goods and services produced in the Region less intermediate inputs.

Source: Department of Local Government and Regional Development.

The production value of the Region's mineral and petroleum industries was \$20.6 billion in 2004/05, with oil and condensate valued at \$7.2 billion, iron ore valued at \$8.0 billion and gas (LNG, LPG, Natural Gas) valued at \$4.8 billion. Other minerals extracted in the Region include salt, silver, gold, manganese and base metals (see page 6).

Commercial activities in the Pilbara primarily service the mineral and energy sector, with engineering, surveying, personnel and equipment hiring services well represented. Retail turnover was estimated at \$344.9 million in 2004/05 and retail and wholesale industries combined employed 14.6 per cent of the workforce in 2001 (see page 12).

Manufacturing, consisting mainly of small businesses supplying the regional market, had an estimated sales and service income of \$309.1 million in 2001/02. At that time, the manufacturing sector employed 5.3 per cent of the Region's workforce (see page 11).

Tourism contributed \$225.9 million to the Pilbara economy. On average, 339,000 over night visitors came to the Region across 2004 and 2005 (see page 5).

In addition, total agricultural production was valued at \$46.0 million in 2003/04, comprised largely of livestock disposals (98 per cent of agriculture production) valued at \$45.2 million (see page 9).

The total fishing catch for the Region in 2004/05 was 3,947 tonnes and was valued at \$15.3 million. The catch was made up primarily of finfish and prawns (see page 10).

The Pilbara Region experienced robust growth in building activity in recent years as a result of large projects in the mineral and petroleum sector. In 2004/05, there were 255 residential dwelling approvals valued at \$67.1 million. In comparison, non-residential building approvals were valued at \$45.1 million (see page 11).

Other sections included in this document are Population (see page 3), Labour Force and Employment by Industry (see page 4), Average Taxable Income (see page 5), Project Investment (see page 13), Indigenous Economic Development (see page 13), and Infrastructure (see page 15).

POPULATION

Population Structure and Characteristics

In 2005, the estimated resident population for the Pilbara Region was 39,282. The Pilbara currently makes up 7.2 per cent of regional Western Australia's population and 2.0 per cent of the State's population.

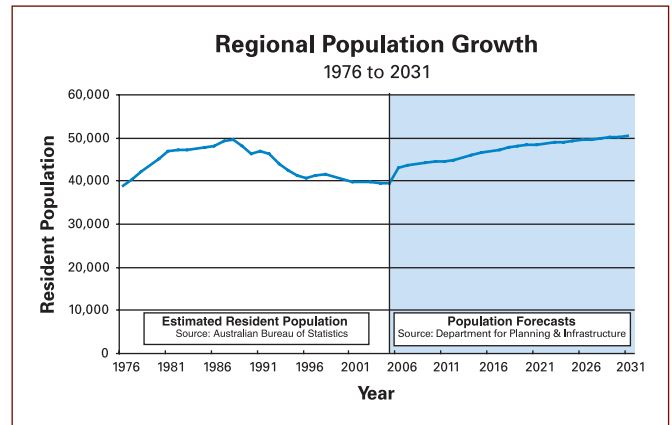
The predominance of the minerals industry has impacted on the populations of specific communities. The influx of large temporary workforces, during the construction phase of large projects, has caused community populations to fluctuate. Pilbara experienced construction-driven population growth during the mid-1980s. The centres of Port Hedland and South Hedland also experienced a brief period of growth from 1996 to 1998 during the construction of the hot briquetted iron (HBI) plant. However, over the decade, from 1995 to 2005, the Region's population contracted (on average) by 0.4 per cent per annum compared to 1.5 per cent growth for regional Western Australia and the State as a whole. The impact of recent mining developments has stemmed the decline in the population creating new opportunities resulting in population growth. In 2005, the Pilbara Region's population was estimated at 39,282 people, an increase of 0.1 per cent compared to the previous year.

Population Distribution

The Pilbara's population is distributed between four local government authorities, with the Shire of Roebourne having the largest share (15,350 people or 39.0 per cent), followed by Port Hedland with 12,335 people, Ashburton with 6,015 people and East Pilbara with 5,612 people. The impact of the current mining boom is reflected in the positive growth rates occurring in the Shires of Ashburton, East Pilbara and Roebourne from 2004 to 2005, and in the positive growth for the Region as a whole for this period.

Growth Projections

The Department for Planning and Infrastructure has produced population projections for the Region. The Region's population is expected to reach 44,200 by 2010, 48,000 by 2020, and 50,200 by 2031.



Note: The apparent 2006 population rise results from the pre-2006 actual population growth rate being lower than the previously estimated forward projections.

Source: Australian Bureau of Statistics and Department for Planning and Infrastructure.

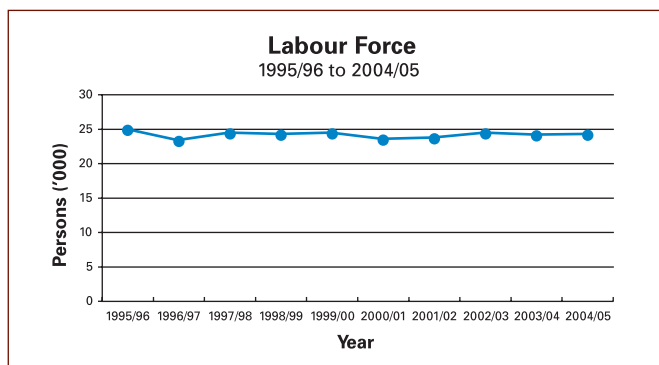
| Estimated Resident Population 1995 - 2005 | | | | | % Share of the Region 2005 | 1 Yr Annual Growth 2004-2005 % | 5 Yr AAGR 2000-2005 % | 10 Yr AAGR 1995-2005 % |
|---|--------|--------|--------|--------|----------------------------|--------------------------------|-----------------------|------------------------|
| Region/LGA | 1995 | 2000 | 2004 | 2005p | | | | |
| PILBARA | 40,873 | 39,971 | 39,229 | 39,282 | 100.0 | 0.1 | -0.3 | -0.4 |
| Ashburton (S) | 7,329 | 6,222 | 5,975 | 6,015 | 15.3 | 0.7 | -0.7 | -2.0 |
| East Pilbara (S) | 7,372 | 5,963 | 5,523 | 5,612 | 14.3 | 1.6 | -1.2 | -2.7 |
| Port Hedland (T) | 12,134 | 12,945 | 12,461 | 12,335 | 31.4 | -1.0 | -1.0 | 0.2 |
| Roebourne (S) | 14,038 | 14,841 | 15,270 | 15,320 | 39.0 | 0.3 | 0.6 | 0.9 |

p = preliminary. AAGR = Average Annual Growth Rate.

Source: Australian Bureau of Statistics - Estimated Resident Population.

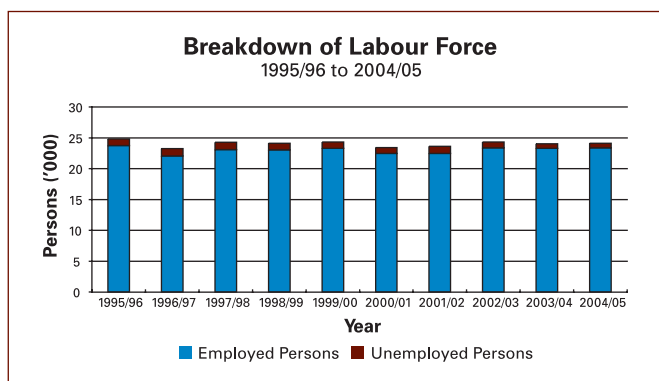
LABOUR FORCE AND EMPLOYMENT BY INDUSTRY

Labour force in Pilbara has remained relatively constant over the ten-year period to 2004/05. In 1995/96, there were 24,831 people in the labour force. Numbers declined in 1996/97 to a low of 23,244, and increased to 24,332 in 2002/03. In 2004/05 there were 24,114 people in the Region's labour force.



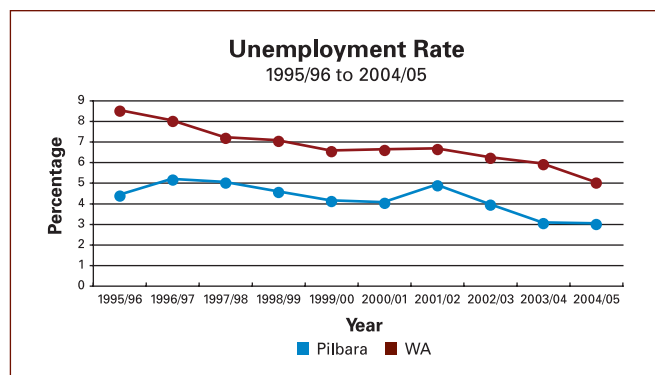
Note: Each financial year is calculated on a four-quarter average.
Source: Department of Employment and Workplace Relations.

The number of employed persons followed a similar pattern as the labour force. In 1995/96, there were 23,745 people employed in Pilbara, with numbers declining in 1996/97 to 22,048 and increasing to 23,393 in 2004/05. The number of unemployed in the Region remained relatively small, averaging around 1,000. In 2004/05, there were 721 people looking for work in the Region.



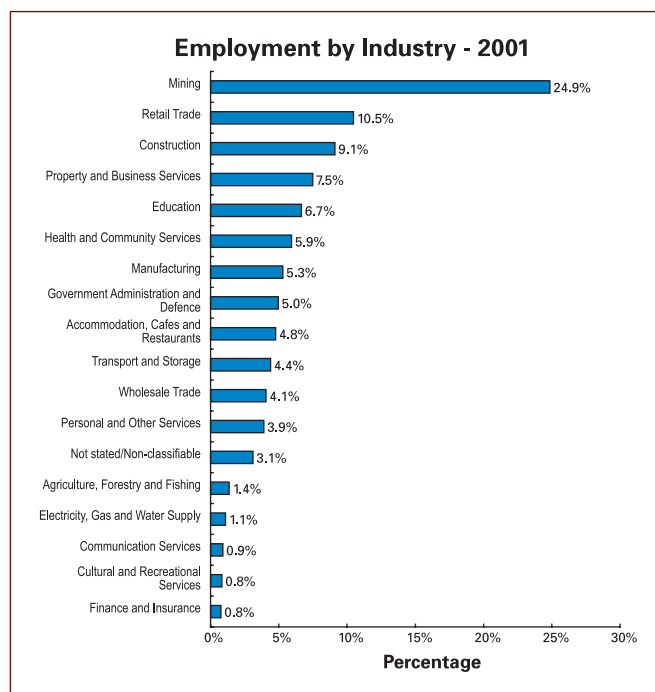
Note: Each financial year is calculated on a four-quarter average.
Source: Department of Employment and Workplace Relations.

The unemployment rate for the Pilbara has remained consistently lower than the State's rate over the ten-year period to 2004/05. In 1995/96, the Region's unemployment rate was 4.4 per cent compared to the State's 8.5 per cent. In 1996/97, the unemployment rate peaked at 5.1 per cent before it fell to a low of 3.0 per cent in 2004/05. Western Australia's unemployment rates over the same periods were 8.0 and 5.9 per cent respectively.



Note: Each financial year is calculated on a four-quarter average.
Source: Department of Employment and Workplace Relations.

Employment in the production sectors of mining, manufacturing and agriculture accounted for 24.9 per cent, 5.3 per cent and 1.4 per cent respectively of the Region's total employment. The key service sector industries, in terms of employment, were retail trade (10.5 per cent), construction (9.1 per cent), and property and business services (7.5 per cent).



Source: ABS Census Usual Residence - Employment by Industry.

The largest increase in employment share from 1996 to 2001 occurred in government administration and defence (3.0 per cent to 5.0 per cent). Property and business services increased from 5.7 per cent to 7.5 per cent, and retail trade from 9.4 per cent to 10.5 per cent. The largest decreases were in mining, which declined from 27.0 per cent to 24.9 per cent, and manufacturing, which declined from 7.2 per cent to 5.3 per cent.

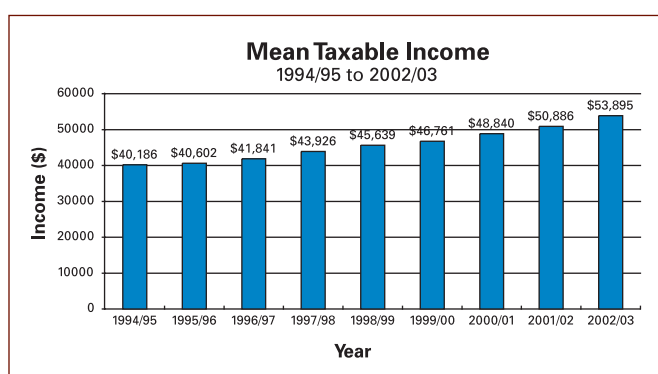
Employment by Industry – 1996 & 2001

| Industry | 1996 % Share | 2001 % Share | Change in Percentage Points |
|--|-----------------|-----------------|-----------------------------------|
| Agriculture, Forestry and Fishing | 1.6 | 1.4 | -0.3 |
| Mining | 27.0 | 24.9 | -2.1 |
| Manufacturing | 7.2 | 5.3 | -1.9 |
| Electricity, Gas and Water Supply | 1.0 | 1.1 | 0.1 |
| Construction | 8.3 | 9.1 | 0.8 |
| Wholesale Trade | 3.3 | 4.1 | 0.8 |
| Retail Trade | 9.4 | 10.5 | 1.0 |
| Accommodation, Cafes and Restaurants | 5.4 | 4.8 | -0.6 |
| Transport and Storage | 5.0 | 4.4 | -0.7 |
| Communication Services | 0.8 | 0.9 | 0.1 |
| Finance and Insurance | 1.0 | 0.8 | -0.3 |
| Property and Business Services | 5.7 | 7.5 | 1.8 |
| Government Administration and Defence | 3.0 | 5.0 | 1.9 |
| Education | 7.1 | 6.7 | -0.4 |
| Health and Community Services | 6.8 | 5.9 | -0.9 |
| Cultural and Recreational Services | 0.7 | 0.8 | 0.2 |
| Personal and Other Services | 3.1 | 3.9 | 0.7 |
| Non-Classifiable/Not Stated | 3.6 | 3.1 | -0.5 |
| Total | 100.0 | 100.0 | 0.0 |

Source: ABS Census Usual Residence - Employment by Industry.

AVERAGE TAXABLE INCOME

Taxpayers in the Pilbara Region had an average taxable income of \$53,895 in 2002/03, the highest in Regional Western Australia. Over the nine years from 1994/95 to 2002/03, average taxable income in the Region rose by more than 34 per cent. The Region's income was enhanced by relatively high paid jobs in the mining sector.



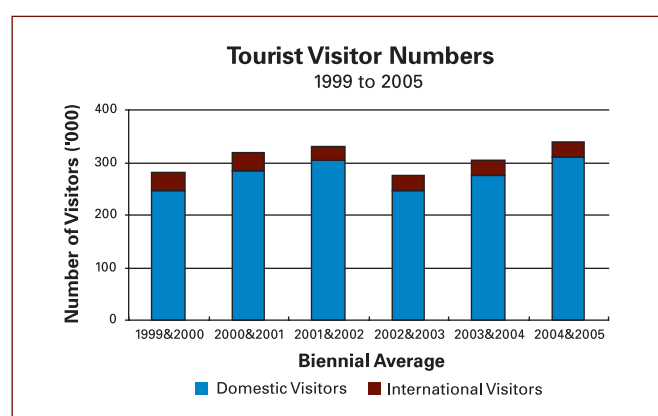
Source: Australian Bureau of Statistics and Australian Taxation Office.

TOURISM

Tourism is a small but valuable contributor to the Pilbara's economy. The industry is growing as more travellers, both domestic and international, become aware of the natural attractions on offer in the Pilbara. The growing appeal of cultural tourism and ecotourism augurs well for the future of the tourism industry in the Region. The Pilbara has a variety of attractions from the spectacular gorges and waterfalls of the Karijini National Park to the tropical oasis of the Millstream-Chichester National Park. Older towns such as Marble Bar and Cossack have a range of historical features, while those interested in aquatic pursuits can fish, dive and enjoy boating activities around the magnificent Dampier Archipelago.

Tourism statistics are calculated for Tourism Western Australia based on biennial averages (average across two years). On average, an estimated 339,000 domestic and international visitors stayed overnight in the Pilbara Region across 2004 and 2005, a 11.6 per cent increase compared to the previous period. Visitors to the Region stayed a total of 2.4 million nights, accounting for 5.1 per cent of the total tourist market to Western Australia.

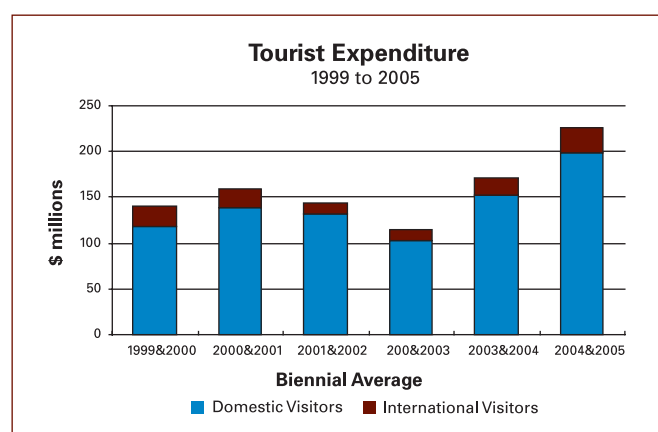
Domestic visitors accounted for the largest proportion of visitors to the Region. Across 2004 and 2005, there were 310,500 overnight domestic visitors to the Region compared to 28,500 overnight international visitors. Of all the domestic visitors, 82 per cent came from other parts of Western Australia and 18 per cent from interstate. The average length of stay for domestic visitors was 6.5 nights and 12.5 nights for international visitors.



Note: visitor numbers are based on a two-year rolling average.

Source: Tourism Western Australia.

Total overnight domestic visitor expenditure for the Region across 2004 and 2005 was estimated at \$198.0 million, compared to \$27.8 million for international visitors. Total expenditure was \$225.9 million, 31 per cent higher than the previous period. The average daily expenditure was estimated at \$97 for each domestic visitor and \$78 for each international visitor.



Note: Expenditure calculated based on a two-year rolling average.

Source: Tourism Western Australia.

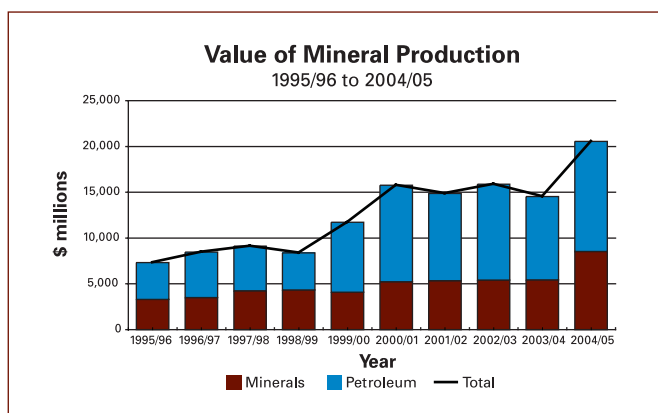
Overall, 53 per cent of domestic visitors travelled to the Pilbara Region for business purposes, with a further 39 per cent came for holiday/leisure and/or to visit friends/relatives. On the other hand, international visitors travel to the Region predominantly for holiday/leisure (71 per cent), with a small portion (12 per cent) for business.

In terms of tourist accommodation, 26 per cent of domestic visitors stayed in hotels, resorts, and motels. An additional 14 per cent stayed in non-commercial accommodation such as a friend or relative's property, and 31 per cent in Caravan or camping grounds. The majority (46 per cent) of International visitors stayed in caravan style accommodation while an extra 24 per cent stayed in hotel, resort or motel accommodation over the same period.

Based on a four-year rolling average, domestic visitors were most likely to travel to the Region between July to September while international visitors preferred to come later in the year between October to December.

MINING

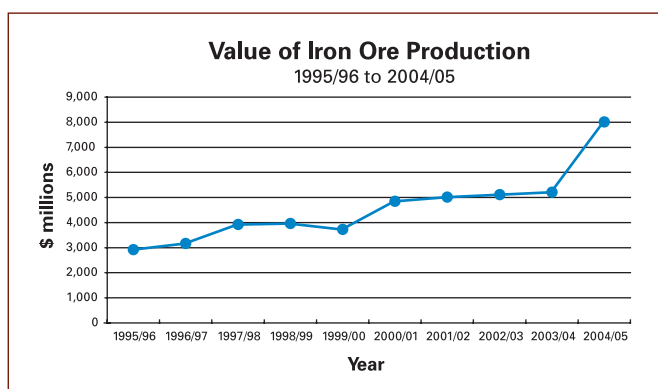
In 2004/05, the Region's total mining and petroleum industry production was valued at \$20.6 billion, representing 62 per cent of the State's total value of mineral production. Petroleum and iron ore are the largest valued commodities. The value of petroleum production has grown and now contributes \$12 billion to the Region's economy and iron ore contributes an estimated \$8 billion.



Source: Department of Industry and Resources.

Iron Ore

The Pilbara is Western Australia's principle iron ore mining region. In 1995/96, the value of iron ore production was \$2.9 billion, which increased to \$8.0 billion in 2004/05. This accounted for over 96 per cent of the State's total production of iron ore. Although the majority of all iron ore produced is exported, 4 million tonnes of the Region's iron ore was traded domestically.



Source: Department of Industry and Resources.

The Region's iron ore export continues to create record volumes. In 2004/05, China became the largest export market taking 50 per cent of Western Australia's iron ore exports (\$4.1 billion), followed by exports to Japan valued at \$2.6 billion (31.9 per cent) and South Korea valued at \$817 million (10 per cent).

Iron ore production is directly linked to the steel industry and developments in the world's steel market. Economic prosperity in China has facilitated strong demand for steel and therefore iron ore, with China becoming one of Western Australia's most important customers. Western Australian producers are setting world standards in efficiency (lower per unit costs), ensuring they are in a good position to take advantage of growth in the Chinese market.

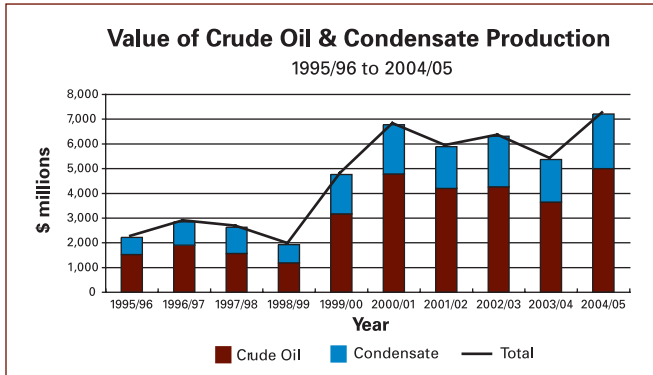
Rio Tinto's subsidiary Hamersley Iron produced an estimated 70 million tonnes of iron ore in 2003/04. Production came from the company's Marandoo, Tom Price, Paraburdoo, Channar and Brockman operations. In April 2004, construction of the \$124 million Eastern Paraburdoo mine was completed. The joint venture project between Hamersley Iron and Shanghai Baosteel (one of China's largest steel mills) is expected to provide around 200 million tonnes of iron ore to Baosteel during a 20-year period. In addition, in early 2004, Rio Tinto signed a Heads of Agreement with Baosteel for further iron ore supplies commencing in 2006. The contract will provide Baosteel with an additional seven million tonnes of iron ore per year from Rio Tinto's Hamersley and Robe River operations.

Rio Tinto commissioned Robe River's \$1 billion West Angelas iron ore project. Robe River is the world's largest supplier of low-content iron ore. The project was completed in early 2002, and in 2003/04, produced 42 million tonnes of iron ore. Considerable capital was invested in the upgrade of rail and port capacity, which included the upgrade of port facilities at Dampier and Cape Lambert.

The other major producer in the Region is BHP Biliton (BHPB). The company's major operations include Newman, Marillana Creek, Mining Area C, Goldsworthy, Yandi and Jumblebar. In March 2004, BHPB secured a 25-year, US\$9 billion export contract with China. Under the deal, 12 million tonnes of iron ore will be shipped to Chinese steel mills each year. BHPB continues to evaluate possible expansion plans to meet the world's growing demand, which includes the upgrade of rail networks and port facilities. BHPB indicated in early 2004 that it would evaluate the possibility of increasing iron ore output to 145 million tonnes per year.

Crude Oil

The value of crude oil in 1995/96 was \$1.5 billion, which has subsequently increased to \$5.0 billion in 2004/05 accounting for over 96 per cent of the State's production.



Source: Department of Industry and Resources.

The fluctuation in volume experienced over the decade was due to several mature oil fields depleting their reserves. The falls however, were off set by output increases from a number of new fields, the most significant contributors being Hermes, Hovea and Woollybutt.

In 2004/05, crude oil exports amounted to \$4.1 billion. The main overseas markets were USA, valued at \$833 million (20 per cent), followed by New Zealand valued at \$625 million (15 per cent), Japan valued at \$573 million (14 per cent), Singapore (11 per cent), and Thailand (10 per cent).

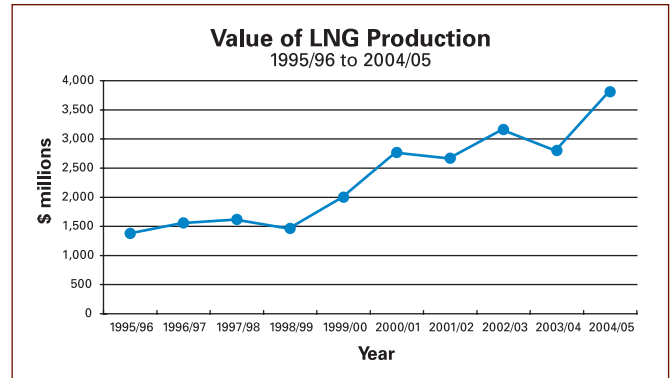
The Australian Bureau of Agriculture and Resource Economics (ABARE) expects global crude oil price to decline gradually during 2006 as a consequence of lower world economic growth and increased OPEC production. The lower economic growth will reduce demand and an increase in OPEC production will increase stock levels. Together, these factors are expected to place downward pressure on the price of crude oil in the short term.

Petroleum Condensate

The value of petroleum condensate production for 2004/05 was \$2.1 billion, which accounted for 99 per cent of the State's production. The major markets for condensate are Singapore valued at \$528.7 million (25 per cent), South Korea valued at \$418.6 million (20 per cent), Thailand (19 per cent) and Japan (10 per cent).

Liquefied Natural Gas (LNG)

LNG in the Region is produced by the North West Shelf Venture (NWSV) gas project, located 130 km off the Pilbara coast. LNG production represented 28.5 per cent of the Region's total mineral and petroleum product. Over the ten years from 1995/96 to 2004/05, the value of LNG production increased considerably from \$1.4 billion to \$3.8 billion.



Source: Department of Industry and Resources.

Japan remains the largest overseas market for LNG, accounting for 84 per cent of the State's total LNG export. In July 2004, a new sale and purchase agreement was signed between NWSV and Kansai Electric Powers, Japan's second-largest power company, for the supply of LNG to Japan from 2009 to 2023.

In addition, from 2005/06, the North West Shelf Project will supply more than three million tonnes of LNG per year for 25 years to Guangdong Province in south-east China. The \$25 billion contract is Australia's biggest export contract with a single customer. This contract underpins the development of a fifth LNG processing train on the Burrup Peninsula.

A new LNG project is currently under development in the Region. The Gorgon gas project is the second LNG project in the State and centres on the development of an LNG facility on Barrow Island. Contracts have already been signed to sell LNG into Japan and to the Gujarat State Petroleum Corporation (India) commencing in 2010.

The demand for gas has resulted in the construction of the North West Shelf LNG Trains 4 and 5 Trunk Line Project. Together, the two trains are expected to increase production capacity by 8.4 million tonnes per year with an estimated 1,500 construction jobs and 20 operating jobs to be created. The first LNG cargoes are planned for 2008.

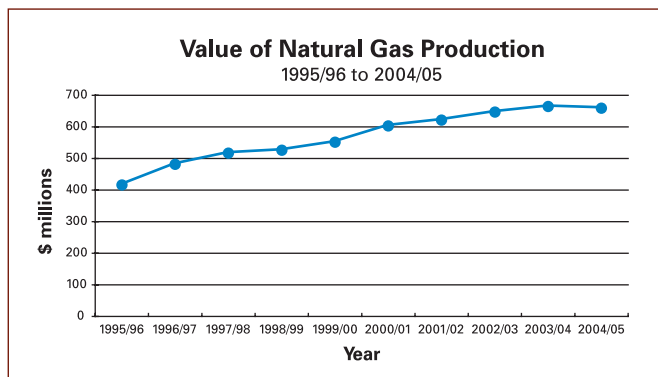
Liquefied Petroleum Gas (LPG)

In 2004/05, production of LPG was valued at \$375 million and was made up of butane (\$210 million) and propane (\$165 million). All LPG produced in the State was exported to Japan. The North West Shelf Gas Project's LPG extraction plant commenced operation in 1995. This plant extracts LPG from the natural gas produced from the North Rankin, Goodwin, and Wanaea/Cossack fields.

Natural Gas

Natural gas is produced for domestic consumption by industry and households. The value of gas production has increased steadily over the ten years to 2004/05. In 1994/95, production was valued at \$416 million, which increased to \$659 million in 2004/05 constituting 97 per cent of the State's natural gas production. The Goldfields Gas Pipeline, which extends from the Carnarvon Basin, offshore from the Pilbara coast to the Eastern Goldfields, plays a key role in supplying industries with natural gas at competitive prices. The gas is important as a

fuel used to generate competitively priced electricity, which in turn encourages mineral exploration, minerals processing, and industry development along the route of the pipeline. Large customers can gain third party access to the gas under a statutory process overseen by the Gas Access Regulator.



Source: Department of Industry and Resources.

The availability of large gas resources and their distribution through gas pipelines is complemented by the Western Australian Government's commitment to providing key infrastructure to support and encourage new gas-based industries. This has made the industrial estate on the Burrup Peninsula very attractive to major investors interested in 'gas to liquids' type petrochemical industries.

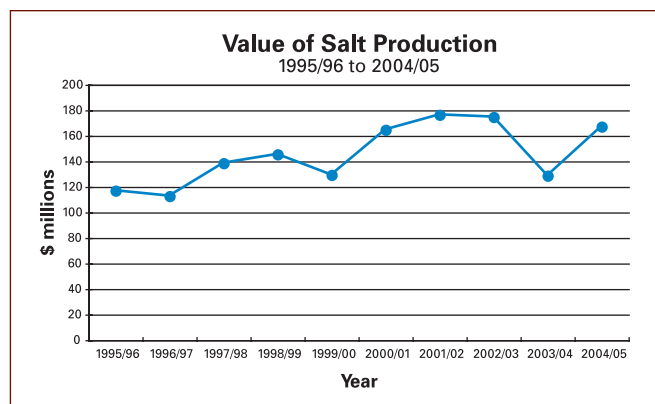
Burrup Fertilisers Pty Ltd has constructed a \$630 million Burrup Peninsula Ammonia Plant, which will produce 760,000 tonnes of liquid ammonia annually. The project will use approximately 82 terra joules of natural gas per day. The project became operational in 2005 with a workforce of 60 employees.

GTL Resources/Liquigaz are proposing a methanol plant, which would produce one million tonnes of methanol per annum at a cost of \$800 million. Dampier Nitrogen/Dyno Nobel is considering the construction of an ammonia urea plant, which will produce 1.2 million tonnes of granulated urea, 100,000 tonnes of ammonia and 235,000 tonnes of ammonium nitrate per annum at a cost of \$900 million.

In addition, Agrium Australia Ltd is proposing to develop a \$900 million world-scale ammonia urea plant on the Burrup West Industrial Estate and Deepak Fertilisers is investigating the feasibility of an ammonium nitrate complex on the Burrup Industrial Estate, valued at \$399 million.

Salt

The Pilbara has the largest solar salt fields in Australia. There are three major salt fields in the Region at Dampier, Port Hedland and Onslow. Salt production was valued at \$167.3 million in 2004/05, representing 75.6 per cent of the State total. Salt production in the past ten years has fluctuated. A slow trend of improvement was apparent from the mid-1990's through to early 2000's. Value declined in 2003/04 due to a lower international price and the appreciation of the Australian dollar. Price recovered in 2004/05.



Source: Department of Industry and Resources.

Salt is principally exported to Asia, with the largest customers in the chemical industries being Japan, South Korea, Taiwan and Indonesia. In addition, a proportion is used in food processing and for domestic consumption in Malaysia and the Philippines. Salt also has domestic, medical and industrial uses as fluxes for aluminium alloys, fabric dyeing and metal cleaning. It is an important feedstock for the chlor-alkali and other chemical industries and is used in the production of saline solutions.

Dampier Salt is the State's principal salt producer and world's largest exporter of solar salt, accounting for almost 70 per cent of the State's salt production (8.2 million tonnes) with 55 per cent extracted in the Pilbara. Onslow Salt is the State's second largest salt producer, with a production capacity of 2.5 million tonnes per annum, which it is looking to increase to 3.0 million tonnes or greater.

Copper

Copper is the only base metal produced in significant quantity in the Pilbara Region. The value of copper production in the Pilbara was \$128.7 million in 2004/05. While this was less than one per cent of the value of the Region's mineral and petroleum production, the Pilbara accounted for more than 61 per cent of the State's copper production. Copper production was made up of copper-by-product, copper cathode and copper concentrate.

The Nifty mining operation, 200 km south east of Port Hedland, is the Region's largest operating copper mine. New developments are underway to improve the Nifty mine's operation capacity from 1.5 million tonnes per year to 2.5 million tonnes per year, expanding the mine-life by 10 to 12 years at a cost of \$200 million.

Manganese

The majority of manganese ore is used for steel making to deoxidise refined steel and as an alloying element in solution, where it has a strong influence on structure and properties. It is also used in non-metallurgical applications such as dry batteries, electronics, paint, colouring of bricks and tiles, fertiliser and animal feed. The Region's manganese is extracted from the Woodie Woodie manganese mine located south-east of Port Hedland.

In 2004/05, the value of manganese production was \$115.1 million, which represented the entire State production and an increase from \$80.1 million in 2003/04. The increase was driven by the strong demands from the buoyant global steel market.

Nickel

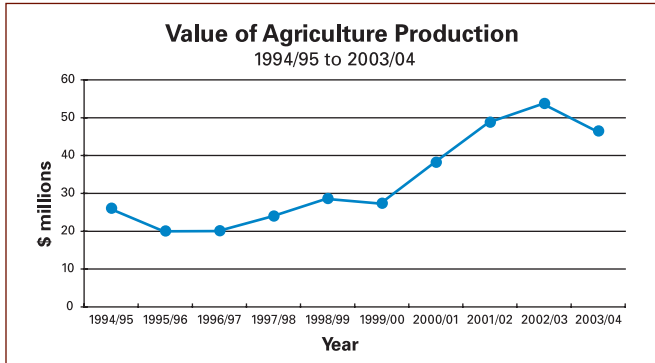
Nickel production in the Pilbara in 2004/05 amounted to 2,004 tonnes and was valued at \$38 million. The Radio Hill operation is the Region's sole nickel project, with production exported to China's Jinchaun group. The first shipment was made in August 2004 after production commenced in July.

Gold

Gold production in the Region was suspended with the temporary closure of the Telfer gold mine. The redevelopment of the Telfer mine resulted in production re-commencing in November 2004. In addition, Poulsens gold mine commenced production in the Shire of Ashburton. In 2004/05, regional gold production amounted to \$93.8 million.

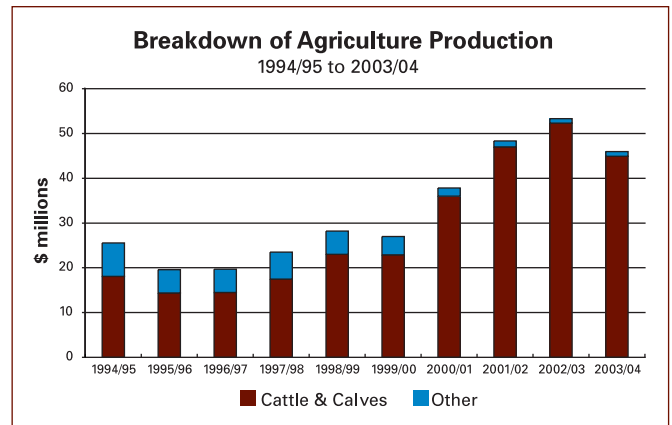
AGRICULTURE

As a mining dominated Region, the Pilbara contributes a small proportion to overall Western Australian agricultural production. In 1994/95, agricultural production was valued at \$25.6 million (0.7 per cent of the State's total). In general the value of agriculture increased over the decade reaching \$46.0 million in 2003/04, retaining the Region's share of agriculture production of 0.7 per cent.



Source: Australian Bureau of Statistics.

As environmental conditions in the Region are generally unfavourable for crop production, pastoral activities account for the majority of agricultural output. Beef cattle alone contributed 97.8 per cent (\$45.0 million) of the gross value of regional agriculture activity in 2003/04. Cattle production was complemented by nursery crops (cut flowers, turf etc) valued at \$618,614, wool production valued at \$232,341 and sheep and lamb for meat valued at \$131,796 in the same year. In the earlier part of the decade, wool made a significant contribution to the regional economy (see graph Breakdown of Agriculture Production) and by the end of the decade, nursery produce and sheep and lambs (for meat) were the other major commodities.

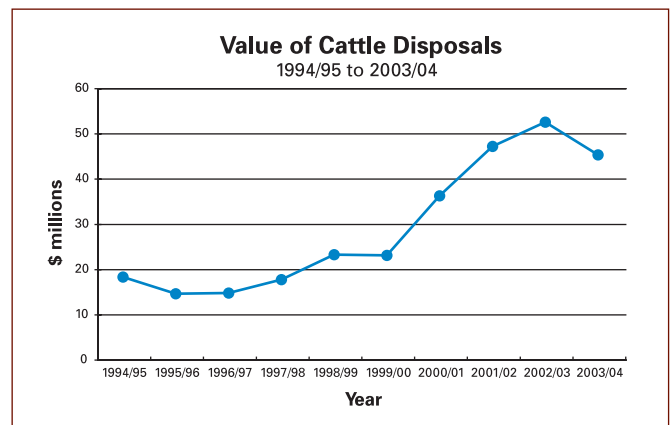


Source: Australian Bureau of Statistics.

Pastoral Industry

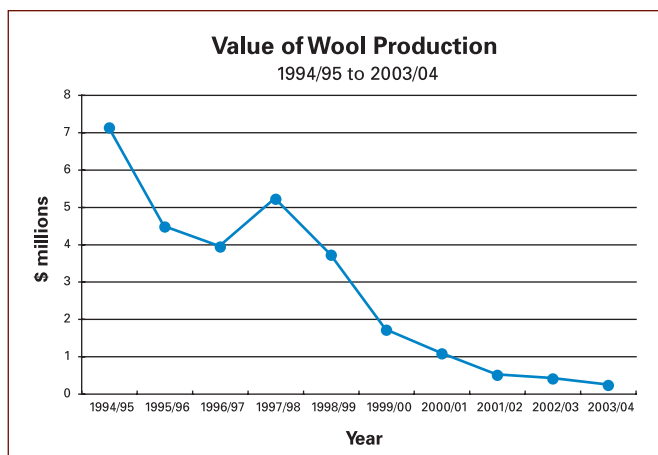
The development of the pastoral industry was largely responsible for European settlement of the Region. Prior to the resources boom of the 1960s, the pastoral industry was the mainstay of the economy, with cattle and sheep grazing extensively on native shrubs and grasslands.

In 1994/95, cattle disposals amounted to \$18.1 million, representing 6.1 per cent of the State's beef cattle herd. By 2003/04, the herd increased in value to \$45.2 million (9.2 per cent of the value of the State's herd). The Pilbara's herd in 2003/04 numbered 307,440 beef cattle and approximately 200 dairy cattle.



Source: Australian Bureau of Statistics.

The Pilbara sheep and lamb flock in 1994/95 amounted in value to \$0.3 million. The value of sheep slaughtering peaked in 1999/00, when the flock was valued at \$2.4 million. Subsequently, the value of sheep and lambs for slaughter fell to \$0.1 million in 2003/04.



Source: Australian Bureau of Statistics.

The value of wool production declined in the Pilbara, over the decade.

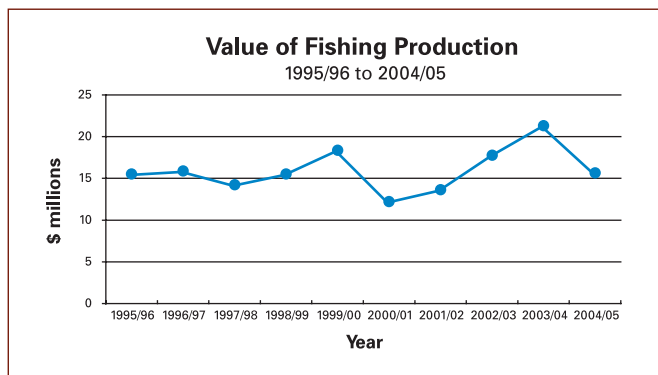
In 1994/95, the value of wool amounted to \$7.1 million declining to \$0.2 million in 2003/04.

The cattle industry is growing at the expense of the sheep industry. Potential exists for the cattle industry to expand its exports, which according to ABARE should increase stock numbers and returns in 2005/06. The export of live animals will remain lucrative in 2005/06 as prices are expected to rise increasing the value of exports over the coming 12 months.

FISHING AND AQUACULTURE

Fisheries in the Pilbara Region focus on tropical fish, in particular high value emperors, snapper and cod. Other species include Spanish mackerel, barramundi, threadfin salmon, and sharks. There are also prawn, crab and mollusc fisheries.

The fishing industry is small compared to the other major industry groups in the Region and the value tends to fluctuate. In 1995/96, the total catch for the Region was valued at \$15.2 million, which increased to \$21.0 million in 2003/04. By 2004/05, the catch was valued at \$15.3 million. Finfish and prawns dominated the catch.



Source: Department of Fisheries.

Finfish

| | Catch (tonnes) | | | Estimated Value (\$'000) | | |
|---------|----------------|---------|----------------------|--------------------------|---------|---------|
| | 2002-03 | 2003-04 | 2004-05 ^a | 2002-03 | 2003-04 | 2004-05 |
| Finfish | 3,294 | 3,794 | 3,533 | 10,846 | 12,277 | 11,766 |

Source: Department of Fisheries.

The main species of fish caught are goldband snapper, spangled emperor, mackerel, and shark. For 2002/03, the total finfish catch was 3,294 tonnes with an estimated value of \$10.8 million. By 2004/05 the catch increased to 3,533 and was valued at \$11.8 million.

Prawns

| | Catch (tonnes) | | | Estimated Value (\$'000) | | |
|--------|----------------|---------|----------------------|--------------------------|---------|---------|
| | 2002-03 | 2003-04 | 2004-05 ^a | 2002-03 | 2003-04 | 2004-05 |
| Prawns | 496 | 382 | 266 | 5,888 | 4,365 | 2,949 |

Source: Department of Fisheries.

The total prawn catch for the Region in 2002/03 was 496 tonnes with an estimated value of \$5.9 million. By 2004/05, the catch had decreased to 266 tonnes valued at \$2.9 million. The Onslow Prawn Fishery and the Nickol Bay Fishery catch consists of tiger, king, endeavour and banana prawns.

Molluscs

| | Catch (tonnes) | | | Estimated Value (\$'000) | | |
|---------|----------------|---------|----------------------|--------------------------|---------|---------|
| | 2002-03 | 2003-04 | 2004-05 ^a | 2002-03 | 2003-04 | 2004-05 |
| Mollusc | 108 | 1010 | 66 | 256 | 3,681 | 142 |

Source: Department of Fisheries.

In 2002/03, the mollusc catch was 108 tonnes and valued at approximately \$256,000, which increased to 1,010 tonnes valued at \$3.7 million, before falling to 66 tonnes in 2004/05 valued at \$142,000.

Aquaculture

| | Estimated Value (\$'000) | | |
|-------------------------------------|--------------------------|---------|---------|
| | 2002-03 | 2003-04 | 2004-05 |
| Pearls | 18,600 | 18,300 | 18,300 |
| Goldfish, koi carp, ornamental fish | 112 | 122 | 92 |

Source: Department of Fisheries.

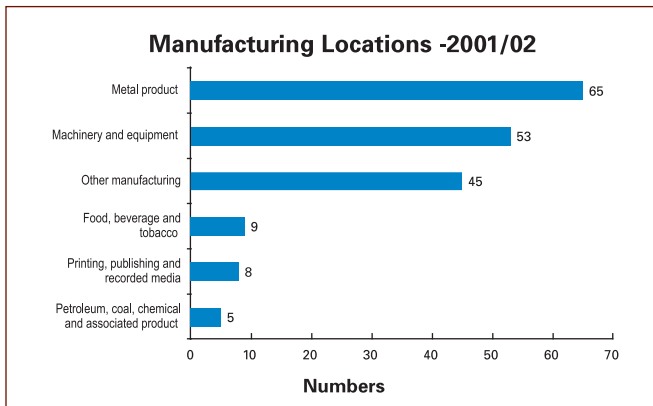
The Pilbara Region produces approximately 15 per cent of the value of the State's pearl production. In 2002/03, this was valued at \$18.6 million, dropping to \$18.3 million in 2003/04 and 2004/05. In addition, aquarium species were valued at \$112,000 in 2002/03, increasing to \$122,000 in 2003/04 and dropping to \$92,000 in 2004/05.

Pearling is spread throughout the Pilbara, and includes several land-based sites, pearling leases and a pearl oyster hatchery. Most of the sites are in the waters of the Dampier Archipelago and the Montebellos/Lowendal area. There are also sites near Point Samson and Port Hedland. The majority of species farmed in the Region are *Pinctada maxima*, *Pinctada albina*, *Pinctada margaritifera* and *Pteria penguin*.

MANUFACTURING

Manufacturing in the Pilbara accounts for a small proportion of the Region's total economic activity, with operations being dominated by the manufacture of metal product and machinery and equipment. There are also food, printing, and petroleum manufacturing activities.

The 2001/02 Manufacturing Census provides the most up to date information on the Region's manufacturing activities. There were 185 manufacturing locations in the Region at the time. Manufacturing sales and service incomes were estimated at \$309.1 million, wages and salaries payments were estimated at \$61.7 million.

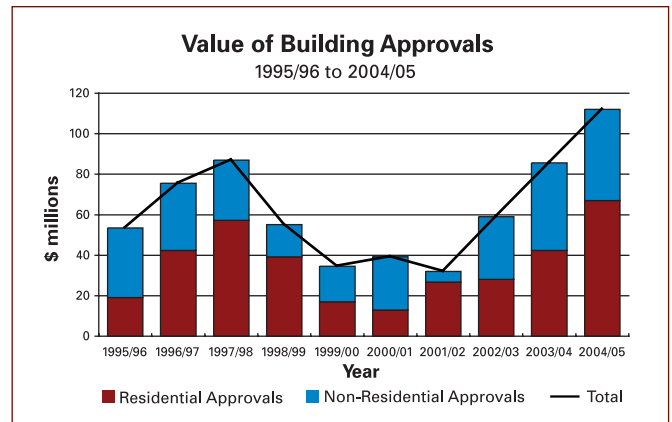


Source: Australian Bureau of Statistics, Revised Manufacturing Census Data.

The sector employed 5.3 per cent of the Region's workforce in 2001 (ABS Census - Usual Residence).

CONSTRUCTION

Construction in the Pilbara Region is largely driven by activity in the mineral and petroleum sector. The value of building approvals fluctuated from 1995/96 to 2004/05. In 1995/96, the value of construction totalled \$53.4 million, which increased to \$87.0 million in 1997/98. Both residential and non-residential approvals declined in 1998/99 and remained low until 2001/02. From 2002/03 to 2004/05, the Region experienced a sharp rise in the value of approvals as a result of the international demand for resources and the rejuvenation in mining investment. Steady increases in residential and non-residential approvals have resulted in the value reaching \$112 million in 2004/05.



Source: Australian Bureau of Statistics.

Residential

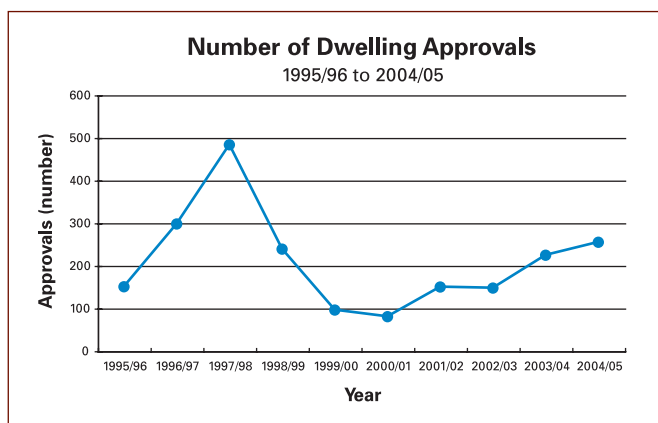
The value of residential building approval was \$19.1 million in 1995/96, accounting for 36 per cent of the Region's total approvals. The value of residential approvals has fluctuated in the past ten years, in response to the changing demand for housing caused by the fluctuation in mining and energy projects in the Region. In 2004/05, residential building approvals increased to \$67.1 million, as a consequence of the current resources boom.

| Building Approvals 2004/05 (\$ millions) | | | |
|--|-----------------------|---------------------------|-------|
| LGA | Residential Approvals | Non-Residential Approvals | Total |
| Ashburton (S) | 0.6 | 16.4 | 16.9 |
| East Pilbara (S) | 11.5 | 11.9 | 23.3 |
| Port Hedland (T) | 19.7 | 5.3 | 25.0 |
| Roebourne (S) | 35.3 | 11.5 | 46.8 |
| Total | 67.1 | 45.1 | 112.0 |

Source: Australian Bureau of Statistics.

Within the Region, the value of residential approvals was highest in the Shire of Roebourne at \$35.3 million (52.7 per cent of the Region's total). The construction and development of large-scale projects on the Burrup Peninsula resulted in an increase in population and demand for residential dwellings, increasing the number of new dwellings approved in the Shire. In the Town of Port Hedland, residential approvals were valued at \$19.7 million (29.4 per cent). The balance was made up of \$11.5 million in the Shire of East Pilbara and \$0.6 million in the Shire of Ashburton. The average value of dwelling approvals in the Pilbara Region was \$262,745.

The number of residential dwelling approvals in the Region in 1995/96 was 151, which increased to 484 in 1997/98 due to growth and development in the mineral and petroleum sector. As regional economic growth slowed in the Region, new residential approvals fell to 81 in 2000/01 before gradually recovering as the next phase of project investment commenced. In 2004/05, there were 255 new dwelling approvals, 30 more than the previous year. Of the 255 dwelling approvals, 129 were in the Shire of Roebourne, 80 in the Town of Port Hedland, 43 in the Shire of East Pilbara and 3 in the Shire of Ashburton.



Source: Australian Bureau of Statistics.

Non-Residential

The value of non-residential approvals in 2004/05 was \$45 million, an increase over the \$43.4 million in 2003/04. The Shire of Ashburton accounted for \$16.4 million (34 per cent), Shire of East Pilbara for \$11.9 million, Roebourne for \$11.5 million and Port Hedland for \$5.3 million.

In 2006/07, State funding has been made available for the following projects:

- \$62 million for the Karratha-Tom Price Link Road.
- \$9.2 million for the improvements and upgrades to the Hedland Health Regional Resource Centre.
- \$7.6 million for improvements to the Dampier Port Authority.
- \$6.7 million for alterations to the South Hedland Police Station.
- \$6.3 million for the Pilbara District Police Complex.
- \$6 million to improve the Dampier Road.
- \$6 million for the Karratha Senior High School redevelopment.
- \$4.4 million for the improvements to Hedland Senior High School.
- \$4 million for new works and improvements to the Port Hedland Port Authority.
- \$3.1 million for undergrounding power supply in Port Hedland to increase reliability due to cyclonic activity.
- \$900,000 toward the construction of a replacement Community Justice Facility for the Pilbara.

- \$11.2 million for upgrading of conditions and security at the Broome Regional Prison.
- \$2.9 million to complete construction of the new Jigalong Police Station.
- \$7.9 million to upgrade Port Hedland water distribution.

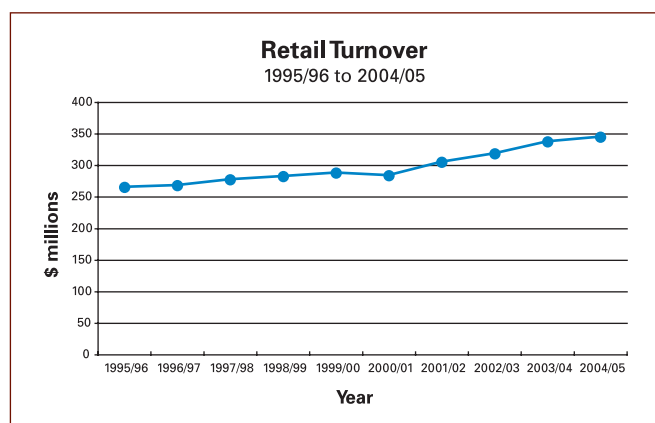
COMMERCE

Karratha, Port Hedland and South Hedland are the three major centres of commercial activity and offer a full range of business activities, including banking, investment and financial services, industry, building and home maintenance supplies, real estate, retail and wholesale, hospitality and accommodation. State and Federal agencies are also located in the major towns.

Many businesses service the minerals and energy sectors and engineering, surveying, personnel and equipment hiring are well represented. Of note, the 2001 Census recorded 14.6 per cent of the Region's workforce employed in wholesale and retail trade, and 8.3 per cent in finance, insurance, property and business services. Government and community employment made major contributions to commercial activity with 6.7 per cent employed in education and 5.9 per cent employed in health and community services (ABS 2001 Residence - Usual Residence).

Retail Turnover

The last retail census in 1991 indicated a retail turnover for the Region of approximately \$232.3 million. Estimates have since been derived by the Department of Local Government and Regional Development based on annual changes in the State and the Region's population and State retail turnover figures. For 2004/05, retail turnover was estimated at \$344.9 million.

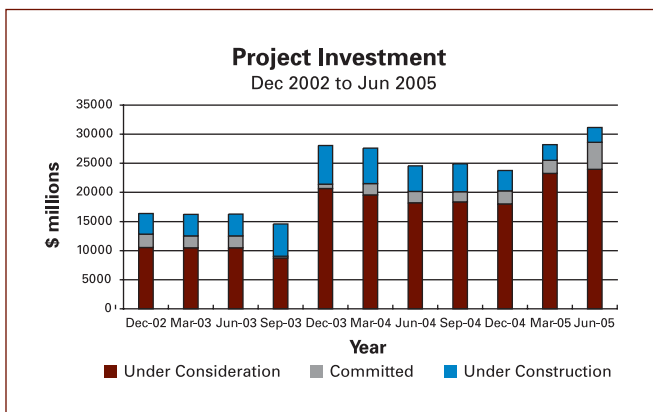


Source: 1991/92 Australian Bureau of Statistics, 1995/96 to 2004/05 Department of Local Government and Regional Development.

PROJECT INVESTMENT

Investment plays a pivotal role in regional growth and development. Total investment in the Pilbara Region has varied throughout the years due to fluctuation in the value of projects under consideration. Following the sharp rise in planning activities between September to December 2003, investment activity in the Region stayed relatively stable, dropping slightly during the six months between June to December 2004, before recovering to peak at \$31.2 billion in June quarter 2005.

In June 2005, there were \$24 billion worth of projects being considered, \$4.7 billion worth of projects committed to and a further 9 projects worth \$2.5 billion under construction.



Source: Access Economics – Investment Monitor.

INDIGENOUS ECONOMIC DEVELOPMENT

More Indigenous people are participating in the Region's economic growth through the establishment of enterprises in key industry sectors.

The construction and opening of the Karijini National Park Visitor Centre has provided the opportunity for Indigenous economic development, through the promotion of cultural tourism ventures and the production of retail products. In 2006, Gumala Aboriginal Corporation secured additional funding to undertake the construction and management of a Safari Style accommodation facility within the National Park, facilitating Gumala Aboriginal Corporations participation within the Region's tourism industry.

Opportunities have arisen for Indigenous economic development through the Native Title Future Act process. Many native title agreements provide for employment and training of traditional owners. Rural and regional business benefits from native title agreements and Indigenous people who have made agreements become active participants in the development of the local economy.

Native Title agreements negotiated by the Pilbara Native Title Service on behalf of its clients in recent years have included:

2005 Agreements

- The Njamal and Palyku people with gold mining company Wedgetail Exploration NL negotiated over a proposed mine in the south-east Pilbara. The range of provisions includes the payment of compensation during the life of the project and a commitment by the company to employ and train traditional owners.
- The Kariyarra, Nyiyaparli and Palyku people negotiated with iron ore mining company Fortescue Metals Group. The agreement created provides for immediate and life-of-project benefits for the traditional owners, including financial compensation, which will include a number of traditional owners receiving vocational training through the Fortescue's Vocational Training and Employment Centre (VTEC).
- The Kariyarra people and the Western Australian government agency, LandCorp, have agreed to a new beach-front residential land release in Port Hedland. The agreement includes an option for the traditional owners to purchase some of the residential lots as well as payment of a small percentage of the land sales. Kariyarra and LandCorp have also agreed to consultation on town planning, to minimise the impact of future development on the environment and Aboriginal heritage sites.
- The Njamal people and BHP Billiton have agreed on the expansion of the Yarrie mining operations. In return, BHP Billiton has agreed to provide a range of benefits to the group.

2004 Agreements

- Separate heritage agreements were established between PNTS and Rio Tinto Iron Ore and Rio Tinto Exploration.
- A memorandum of understanding was created between YMBBMAC, the DIA and the ALT. The MOU provides traditional owners in the Yamatji and Pilbara regions, with the chance to work with the DIA and the ALT to determine more effective methods of progressing the ALT Land Transfer Program, which has resulted in the Ngurawaana community land transfer in the Pilbara.
- The agreement between the Kariyarra People and Range River and Bullion Minerals, regarding a proposed gold mine near Whim Creek, involves a commitment by the company to train, employ, encourage business development and provide a modest financial compensation package for the Kariyarra people. In 2005, Range River Gold bought Bullion Mineral's interests in the mine so the agreement is now entirely between Range River and the Kariyarra people.
- Fortescue Metals Group agreed to negotiation protocols with the Nyiyaparli, Martu Idja Banyjima, Palyku and the Kariyarra people.

2003 Agreements

- The Kariyarra, Ngarla, Njamal, Warrarn and Birrimaya native title claimants negotiated with Newcrest Mining Ltd regarding the construction of a gas pipeline and communication facilities between Port Hedland and Newcrest's gold mine at Telfer. The agreements address the individual heritage concerns of each of the groups and provides compensation and community benefits. The deal also funded a business development officer to assist the groups it represents with economic development opportunities.
- The Pilbara Native Title Service led the negotiations on behalf of the Ngarluma Yindjibarndi native title claimants with the State of Western Australia in relation to the compulsory acquisition of native title over areas of land on and around the Burrup Peninsula.

Other significant developments in the region have included:

- The Federal Court formally handed down the Ngarluma Yindjibarndi Native Title determination at Roebourne Reserve on May 2, 2005. Two separate prescribed body corporates were subsequently established on behalf of the Yindjibarndi and Ngarluma people.
- The joint management of Millstream-Chichester National Park by Yindjibarndi people and CALM was developed through the establishment of the Millstream Park Council and the employment of two Yindjibarndi trainee rangers.

The increased focus on resource activity on the Burrup Peninsula culminated in the largest and most significant Native Title agreement reached in 2002 between three Native Title claimant groups, four industrial companies and the State Government of Western Australia. The agreement, mediated under the Native Title Act, has paved the way for billions of dollars worth of resource projects to proceed on the Burrup Peninsula. Importantly, it has provided the claimant groups, the Wong-Goo-Tt-Oo, Ngarluma Yindjibarndi and Yaburara Mardudhenera people, with a multi million-dollar heritage protection and compensation package.

The plan allows for employment and training opportunities for Indigenous people, a share in the housing developments established to support the industrial estate, and the joint management of the non-industrial land on the Burrup Peninsula. A committee has been established to nominate some or all of the rock art areas for World Heritage Listing.

Work still being completed under the agreement includes the establishment of an authorised body corporate consisting of members of each claimant group; negotiating the joint management agreement over the non-industrial areas; and overseeing heritage surveys of industrial estate areas that have not yet been surveyed.

A native title agreement has also been reached between BHP Iron Ore Pty Ltd and the traditional owners around the Mining Area C deposit, near Newman, to fund programs and employment opportunities for Indigenous people in the area. Following negotiation with BHP Billiton, an agreement was reached with the Innawonga, Bunjima and Niapaili (IBN), Martu Idja Banyjima (MIB) for Mining Area C and the Nyiyaparli

Group covering the power line corridor to the mine. As a result of the negotiation process, BHP Billiton won the Yamatji Land and Sea Council's Snake Award, which honours corporate contributions to the Native Title process and the communities involved.

Pilbara Iron works with indigenous people from 12 language groups and its operations affect an extensive area of land claimed by a similar number of native title claimant groups. Pilbara Iron is currently undertaking a large Pilbara expansion program including brown field and new mine developments and will involve a number of claim-wide agreements that will secure the collective rights and interests of all parties while allowing developments to proceed smoothly. The agreements will deliver considerable benefits and opportunities to local communities and will seek to comprehensively address issues of importance.

Pilbara Iron also seeks to establish a Pilbara-wide agreement with all native title parties affected by its operations.

Existing agreements in the Pilbara Region are:

- Yandi Land Use Agreement;
- Eastern Guruma Indigenous Land Use Agreement;
- West Angelas Agreement - Eastern Guruma;
- West Angelas Agreement - Innawonga Bunjima Niapaili;
- West Angelas Agreement - Ngaluma/Injibarndi; (Northern Link)
- West Angelas Agreement - Gobawarra Minduarra Yinhawanga; and
- West Angelas Agreement - Wong-Goo-Tt-Oo.

The Yandi Land Use Agreement was reached in 1997 between Hamersley and the Innawonga Bunjima and Niapaili peoples. The agreement with the Eastern Guruma people covers 10,000 sqkm including the Tom Price and Brockman operations and was formally registered by the National Native Title Tribunal on 5 March 2004. The Indigenous Land Use Agreement (ILUA) is one of the first of its kind. The West Angelas mine resulted in five Native Title agreements being signed committing the company to provide employment, education and training opportunities and financial payments to Indigenous stakeholders.

In addition to land access, Aboriginal Training and Liaison (ATAL) is also important. Established in 1992, ATAL is based in Dampier and manages training, employment and community relations programs designed to support self-determination and community capacity building within Aboriginal communities in the Pilbara. ATAL runs education programs, pre-employment training programs and scholarship and cadetship programs, which increases the local pool of skilled labour. The ATAL also plays a cultural heritage role, which includes the involvement of Aboriginal Elders.

INFRASTRUCTURE

The infrastructure network that supports the Pilbara Region includes services in energy, water, transport, and communications, which assist businesses located in the Pilbara to remain both regionally and internationally competitive.

Energy

A cost competitive energy market is essential for the development of the Pilbara's mining and petroleum sector, which is highly energy intensive.

The North West Interconnected System (NWIS) is the small electricity grid that links the coastal regions of Port Hedland, Wickham/Cape Lambert and Dampier/Karratha, and extends inland as far as Pannawonica, Paraburdoo and Shay Gap. It was formed by the interconnection of systems owned and operated by Western Power (now Horizons Power) Pilbara Iron, Alinta and BHP Billiton.

The NWIS currently has a total installed generation capacity of some 450 MW of electricity, with an additional 35 MW currently under construction. The facilities are predominantly fuelled by natural gas sourced from the North West Shelf, and are comprised of a mixture of aging thermal stations and more modern gas turbine generators. Alinta owns the generator stations at Port Hedland and Newman and Pilbara Iron owns the generator stations at Cape Lambert, Dampier and Paraburdoo. Horizon Power purchases its power requirements from the private generators in the Region.

Transmission, distribution, marketing and sales of electricity to residential and commercial customers are split amongst Horizon Power, through its Pilbara Power Division (responsible for Karratha, Port Hedland, Roebourne and Point Samson), BHP Billiton (Newman) and Pilbara Iron (Dampier, Tom Price, Paraburdoo, Wickham and Pannawonica). The larger towns in the Pilbara that are not connected to the NWIS include Marble Bar, Newman, Nullagine and Onslow. These towns run on isolated generators. The generators in Marble Bar and Nullagine are maintained and operated by Horizon Power. Modra Electric Power controls generators in Onslow, while Alinta controls the generators in Newman.

Water

The East Pilbara and West Pilbara Water Supply Schemes cover most coastal towns in the Pilbara. The East Pilbara Scheme draws its water from the Yule and De Grey River Borefields, while the West Pilbara has the Millstream Aquifer and the Harding Dam.

Port Hedland, South Hedland, Wedgefield and Finucane Island fall under the East Pilbara Scheme, while the towns of Karratha, Dampier, Roebourne, Wickham and Point Samson fall under the West Pilbara Scheme.

BHP Billiton supplies water to Newman's water tanks and subsequently owns and operates the town's reticulation system. Dampier's reticulation system is owned and operated by Pilbara Iron, but in this instance, the Water Corporation supplies water to its tanks. Pilbara Iron also owns and operates schemes for Tom Price, Paraburdoo, and Pannawonica.

Major Indigenous community water supply and sewerage schemes are operating at Jigalong and Yandeyarra, while water supplies are available at Ngurrawaana, Warralong, Goodabinya, Punmu and Kiwirrkurra.

West Pilbara Water Supply Scheme

The West Pilbara Water Supply Scheme supplied approximately 10 gigalitres (GL) in 2005, from the 15 GL supplied from the Harding Dam and the Millstream Aquifer annually. Historically, the Dam was used for six to eight months of the year, with the Millstream Aquifer providing water for the remaining period. The Harding Dam microfiltration water treatment plant was completed in late 2004, treating and removing suspended solids and organic materials, allowing the Dam to be used all year round.

In addition, the Water Corporation commissioned a desalination plant, which was built in the Burrup Fertilisers' complex. The plant is capable of producing 3.6 megalitres (3.6 million litres) of desalinated water per day, which is currently fully utilised by Burrup Fertilisers.

East Pilbara Water Supply Scheme

Port Hedland currently obtains its water from the De Grey and Yule River Borefields. Plans are underway to upgrade the fields over the next two years, increasing the capacity from 11 GL per annum to 15.5 GL. This project will make water available for the planned BHP expansions at Nelson Point, Finucane Island material handling facilities and assist with future industrial expansion. Significant upgrades will be carried out on the Yule and De Grey Borefields, with the Water Corporation upgrading the current supply between Port Hedland and South Hedland.

At the beginning of 2003, the upgrade of the Port Hedland Wastewater Treatment Plant (WWTP) was completed, resulting in the construction of three new storage ponds adjacent to the plant. These ponds cover six hectares and will increase the efficiency and effectiveness of treated wastewater usage for recreational areas. New disinfection systems are to be installed at Marble Bar and Nullagine over the coming year.

Ports

The ports in the Pilbara handle tonnages far in excess of any ports in the State, dominated by the export trade of commodities such as iron ore, salt and LNG. The Pilbara's three largest ports are located at Port Hedland, Dampier and Port Walcott (Cape Lambert).

In addition, the Department for Planning and Infrastructure operates harbours at Point Samson (John's Creek) and Onslow (Beadon Creek), which primarily service the fishing industry and provide general marine services. A landing port also exists at Barrow Island.

Dampier

The Dampier Port Authority oversees the operations of the Port of Dampier. It is one of Australia's largest tonnage ports with exports of iron ore, salt, LNG, LPG and condensate totalling 95.8 million tonnes in 2004/2005. The value of these exports was in excess of \$7 billion. Iron ore comprised 80 per cent of the Port's total volume of exports. By contrast, the total volume of imports was only 379,000 tonnes. A total of 2,105 cargo vessels used the Port in 2004/2005.

A new multi-user bulk cargo export berth has been constructed at the Dampier Port to accommodate exports from the emerging gas-to-liquids industry on the Burrup Peninsula. This new facility is part of a \$76.4 million upgrade undertaken for the Port by the State Government. The new facility will service liquid tankers and can be upgraded to handle bulk solid cargo vessels without disrupting existing operations. The first project expected to use the new facility is Burrup Fertilisers, which will export up to 760,000 tonnes per annum of liquid ammonia. Other potential users are the Agrium ammonia and urea project and Dampier Ammonia and Dampier Urea projects.

Port Hedland

The Port Hedland Port Authority administers the port operations. During 2004/05, 895 vessels called at Port Hedland. Over 108 million tonnes of cargo was exported from the port and approximately 95 per cent of exported cargo tonnage was iron ore. Other export products included salt, manganese, chromite, copper concentrate, feldspar and livestock. The Port received 522,000 tonnes of import cargo, with the most significant being fuel oils and sulphuric acid. Port Hedland is the largest tonnage port in Australia and further record tonnages are expected over the years to come.

Port Walcott

The Cape Lambert port facilities, also known as Port Walcott, are owned by Robe River Iron Associates and operated by Pilbara Iron.

The Port is used to ship iron ore from Robe River's Mesa J iron ore operation, based at Pannawonica, and from its West Angelas mine. Ore from Mesa J and West Angelas is railed 197 kilometres and 420 kilometres respectively to the processing plant and shipping facility at Cape Lambert.

Current annual ship loading capacity is approximately 55 to 57 million tonnes per year, with studies underway for further expansion.

Roads

The Pilbara is easily accessible by road from Perth by two major highways – the Great Northern Highway (National Highway) and the North West Coastal Highway. Several transport companies provide daily freight deliveries to major Pilbara centres. Preparations are being made to review the Regional Road Development Strategy (Roads 2020), which will look at strategies to integrate road infrastructure with other modes of transport.

Railways

The Pilbara has a rail network totalling 1,264 kilometres in length. The network is owned and operated by the Region's three major iron ore producers, Hamersley Iron Pty Ltd, BHP Iron Ore Pty Ltd and Robe River Iron Mining Company Pty Ltd. These companies use the rail lines to transport iron ore from their inland operations to major ports in the Region for export.

BHP Billiton Iron Ore's railway operations include two separate rail lines, nearly 1,000 kilometres of railway track and a rail fleet comprising 68 locomotives and 3,395 ore cars. This infrastructure is used to haul the company's iron ore from its inland mining operations to the port.

The 426 kilometre rail line from Newman to Nelson Point is one of Australia's longest privately owned railways. With spur lines to Mt Whaleback, Orebodies 23, 25 and 29, Jimbelbar, Yandi and Area C, it services the mines creating the longest and heaviest trains in the world. A typical train on this line has six locomotives carrying more than 24,000 tonnes of iron ore in 300 ore cars.

In addition, 208 kilometres of rail links the Yarrie mine with Finucane Island.

The traffic control centre in Port Hedland manages all train movements and is one of the most sophisticated in the world. Powered by solar technology, the specialised computer software and digital communications control train movements, warn of unsafe conditions and weigh the ore cars as they pass. The system forms an integral part of BHP Billiton Iron Ore's production process.

Communications

Although remote, the Pilbara enjoys the benefits that sophisticated, modern technology affords in the field of communications. Major towns in the Region are connected to the Internet and have access to ISDN, STD, facsimile, telex and data link services. Karratha, Port Hedland, South Hedland, Roebourne, Dampier, Dampier Port Authority, Onslow, Wickham, Tom Price, Paraburdoo and Newman also have access to ADSL services and companies in those towns are examining the prospect of Voice Over the Internet (VOIP) telephone systems.

Local call access to the Internet is available across the Region, although outside major towns, two-way satellite rather than cable generally provides the Internet service.

Public access videoconferencing facilities are available at the Marble Bar Telecentre, Onslow Telecentre, Nullagine MITE (Modular Interactive Telecommunications Environment), Yandeyarra and Jigalong communities with an additional facility proposed for Roebourne. Major towns such as Port Hedland, South Hedland, Karratha, Newman and Tom Price also have facilities with videoconference capabilities. The Pilbara Development Commission is working with Telstra and the remote Indigenous communities of Punmu Parngurr, Kunawarritji and Kiwirrkurra to bring videoconferencing to those communities.

The need for serviceable and reliable mobile telephony is of growing importance in the Region. To date, the Telstra Mobile Network operating in the Pilbara comprises 19 GSM (Global System for Mobiles) base stations and a total of 16 CDMA (Code Division Multiple Access) base stations. The towns of Karratha, Port Hedland, South Hedland, Roebourne, Dampier, Point Samson, Onslow, Wickham, Tom Price, Paraburdoo and Newman are serviced by mobile telephony.

Proposals have been developed for continuous mobile phone coverage along the North West Coastal Highway from Port Hedland to Geraldton. Work has been undertaken to refine the cost estimates and to examine any potential technological impediments to its introduction. The major issues identified included the provision of power for the transponders and regeneration sites. The Pilbara Development Commission and Telstra are still pursuing the development of the project.

ABC television is available throughout the Pilbara Region via the Homestead and Community Broadcasting Satellite Services (HACBSS), using the AUSSAT satellite system. The Golden West Network provides remote commercial television service. SBS and WIN are also available in most towns.

All major towns and most communities receive radio services.

The West Australian newspaper is available daily in most towns in the Region. The North West Telegraph is distributed weekly to the towns of Port Hedland, South Hedland, Marble Bar, Newman and Nullagine, while the Pilbara News is distributed to Karratha, Dampier, Wickham, Roebourne, Point Samson, Tom Price, Paraburdoo, Pannawonica and Meekatharra. Smaller towns distribute regular community newsletters.

Education and Training

Education opportunities in the Pilbara range from pre-school to post-secondary. Both government and non-government schools are present in major towns. For primary and secondary students in areas too remote to attend regular schools, the Port Hedland School of the Air provides opportunities for children to study by correspondence.

Pilbara TAFE offers a wide range of vocational education and training courses and services, which are nationally accredited, through its regional campuses at Karratha, South Hedland, Newman, Tom Price and Onslow.

Health

The Pilbara has a comprehensive network of health services covering all areas of health care and sickness prevention.

The regional hospital or Regional Resource Centre is located at Port Hedland and offers the following services: paediatrics, obstetrics and gynaecology, anaesthetics, internal medicine and general surgery.

The towns of Karratha, Roebourne, Wickham, Tom Price, Paraburdoo, Newman and Onslow are serviced by district hospitals and in the case of Karratha and Newman, these are called Integrated District Health Services. Port Hedland and Karratha also receive visits from specialists including gynaecologists, radiologists, ophthalmologists, rheumatologists, paediatricians, psychiatrists, ear nose and throat specialists, orthodontists and urologists. Patients at other centres are referred to these specialists and may receive travel assistance for visits to Perth, Karratha, or Port Hedland. Emergency cases in isolated areas and smaller centres may be evacuated to larger hospitals via the Royal Flying Doctor Service based at Port Hedland.

Community nursing posts or company-operated clinics service smaller communities.

In addition, the Pilbara Population Health Unit provides community health services (school and child health care), allied health services, drug and alcohol services and health promotion and education.

MORE INFORMATION

Publications

Pilbara Development Commission (2005) - Pilbara Government Agencies Directory*

Pilbara Development Commission and Department for Local Government and Regional Development (July 2001) - Pilbara Economic Perspective*

Pilbara Development Commission (2005) - Pilbara Resources Register*

Pilbara Development Commission (1997/98, 1998/99, 1999/2000, 2000/01 and 2001/02) - Annual Report*

Sinclair Knight Merz (July 1997) - Pilbara Land Use Strategy

Pilbara Development Commission (1995) - Pilbara Regional Profile

Pilbara Development Commission - Promoting the Economic Development of the Pilbara

Pilbara Development Commission (2005) - Housing and Land Snapshot*

Other Relevant Publications

Department of Local Government and Regional Development (January 2002) - Regional Prices Index Third Data Collection 2000

Department of Commerce (February 1999) - Living in the Regions, the State Report

Department of Commerce and Trade (June 1998) - Implications of Competition Policy for Regional Areas

Boshe Group (May 1997) - Communications Audit, Pilbara Region

Boshe Group (May 1997) - Communications Audit, The Needs of Regional Western Australia

Department of Commerce and Trade (July 1999) - Global Incentives for Regional Industry

Department of Commerce and Trade (February 1999) - Taxation & Regional Western Australia Report Summary

NB Publications marked with an * are available on the Pilbara Development Commission's website at www.pdc.wa.gov.au

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Main Photo: Tourism, Karijini National Park courtesy of CALM.
Photo 1: Shipping, courtesy of Pilbara Development Commission.
Photo 2: LNG Exports, courtesy of Woodside Energy Ltd.
Photo 3: Salt Harvesting, courtesy of Dampier Salt Ltd.
Photo 4: Iron Ore Exports, courtesy of Hamersley Iron Pty Ltd.

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