

Identifying the potential and constraints for the growth of Moranbah

RESEARCH REPORT No. 1

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The views and interpretations expressed in these reports are those of the author(s) and should not be attributed to the organisations associated with the project.

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Executive Summary

1. The coal industry boom is generating intense levels of development in the Bowen Basin, which represents about 85% of the coal industry in Queensland. The size of the coal mining industry in Queensland is expected to approximately double in the period between 2000 and 2010. By 2006, another 21 mines were being developed or under active consideration in the Bowen Basin area.
2. Direct employment levels in the coal industry increased by approximately 10,000 people between 2000-1 and 2005-6. This represents an increase of approximately \$1B in wages paid in the Bowen Basin region. Wages to construction workers and multiplier effects will increase this further.
3. The most intense region of new developments and mine expansions is occurring in the Moranbah area. There has already been substantial new development in the area, and these are forecast to continue in the near future.
4. 'Core' employment levels with the mining industry in the Moranbah region are predicted to increase from 2,890 employees in 2002-3 to 6,170 in 2005-6 and to 7,560 in 2010.
5. The impacts on the growth of the Moranbah township from this increase in mining activity and employee numbers has been more modest. This is largely because of new patterns in working and living arrangements, where mining employees work in periods of 'block shifts', and stay in work camps during shift periods. Work camps within Moranbah and nearby towns are handling much of the increase in employee numbers, at least in the short term.
6. At June 2006, Moranbah was estimated by PIFU to have 6,749 permanent residents and 1,915 non-resident workers at any one time. This implies that 3,000 – 4,000 non-resident workers are living elsewhere (largely in the Mackay region) and cycling through Moranbah during shift periods.
7. The boom has had a substantial impact on the cost of housing in Moranbah. Between 2001 and 2006, average house sale prices have increased by approximately 7 times, while median rent levels have increased by approximately 4 times. In 2006, the cost of housing services in Moranbah was rated as 95.5% higher than the cost in Brisbane. These price levels create pressures on households with lower incomes and non-mining sector businesses seeking labour supplies.
8. The boom has not translated into building activity. In 2006, the levels of building approvals, new housing building value and new commercial building value in Moranbah per capita remained well below state averages. In contrast, the level of activity in Mackay was well above state averages. This indicates that the positive impacts of the mining boom are largely bypassing Moranbah in favour of larger regional and urban centres.

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1 Introduction

Moranbah is a key regional centre servicing the mining industry in the northern part of the Bowen Basin, and represents an example of continued development of the coal industry in Australia. A boom in coal prices since 2004 has generated significant additional economic benefits to the state, and contributed to additional investments in exploration, development and infrastructure. The boom has also generated a significant increase in activity in Moranbah, with both increases in activity at existing mines and the prospects for additional mines to be developed.

While there are large social and economic benefits associated with the development of major coal mines, there can also be a number of offsetting impacts such as impacts on rental prices and tighter labour markets. As well, there may social impacts, particularly for small communities that undergo rapid changes. These types of potential impacts are well recognised, and local government, state government agencies and mining companies typically work with communities and government to communicate potential developments, and identify and ameliorate potential negative impacts.

Despite this recognition, there is generally little assessment of the impact of mines on particular communities. In Queensland, there are requirements for proponents of major projects to develop an Impact Assessment Statement (IAS) prior to development as a part of the approvals process. As mining is an environmentally sensitive activity, any changes or expansions will require an amendment to the Environmental Authority so that environmental impacts are assessed. Although the assessment of potential social and economic impacts is included as a key requirement in the IAS process, there are a number of potential limitations with this approach. These were summarised by Rolfe, Ivanova and Lockie (2005) as:

- (a) Impact assessments are typically only conducted for major new projects, and the economic or social impacts of subsequent changes to existing projects are generally not covered,
- (b) There are no follow-up evaluations or assessments to test the accuracy of predictions or modelling about social and economic impacts contained in an impact assessment, and
- (c) There are a number of other variables influencing economic and social impacts (eg. changes in demographics, technology, commodity prices and employment relations) that can impact on local and regional communities, and which are not necessarily covered in an impact assessment process¹.

This research project is focused on identifying a number of the social and economic impacts that have been generated from the coal mining expansion. Identification of these impacts can help the Belyando Shire Council and Queensland government agencies to respond and plan more consistently to a number of development pressures that have

¹ Some may be picked up in the Development Assessment process under the Integrated Planning Act (1997).

emerged. There are also reasons why the assessments of economic and social impacts are important for the Moranbah community.

The first is that the local community is interested in maximising the positive benefits that flow from mining. These might include increases in population and business opportunities. However, the shiftwork operations of the mines mean that many employees and contractors are based outside of the town and have little connection with Moranbah. Much of the increase in labour has been catered for with the construction of workcamps, and there has been limited development of housing and associated infrastructure. As well, businesses servicing the mining industry have tended to be located at a regional centre rather than smaller townships.

The second reason is that the local community may be anxious to avoid economic and social problems associated with mining. In recent years, some mining communities have struggled to cope with change as the industry has reorganised and reduced its labour force. Many mines only have an economic life of 15–30 years, and closure has subsequent impacts on their service communities.

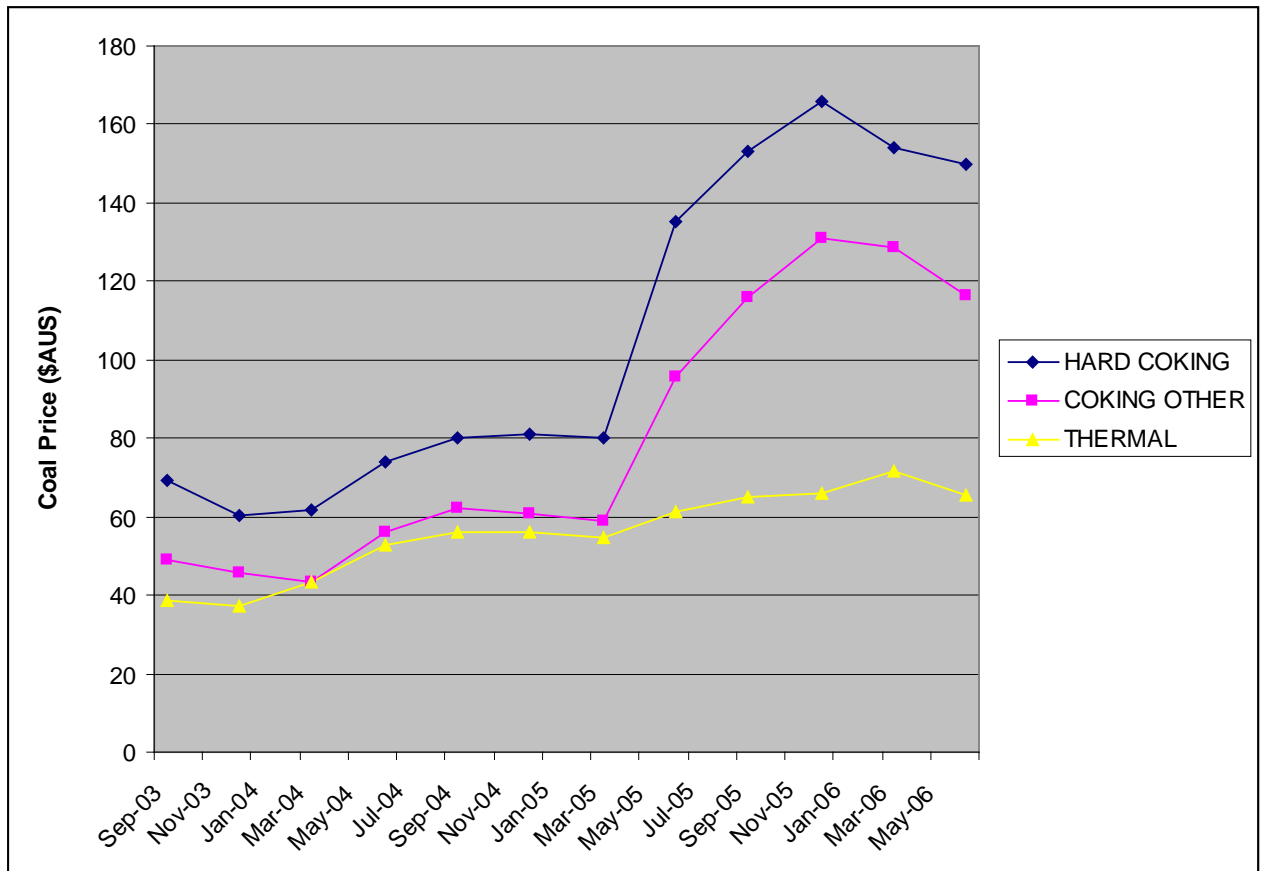
The third reason is that communities are essentially in the position of having to compete for population and businesses, because good communication and transport links make it easier for employees and services to be more mobile. Communities and local and state government have to provide the infrastructure and services that make communities viable and attractive. Identification of the economic and social opportunities available can be important in allowing communities such as Moranbah the chance to capitalise on the opportunities available.

This report is the first outcome of the 2006/7 study of mining impacts on the Moranbah shire community, and is focused on the identification of key issues and review of the available data. The report is structured in the following way. An overview of the coal industry in Queensland is provided in the next section, followed by a summary of the impacts of the mining boom in the Bowen Basin. An analysis of trends and impacts relevant to the Moranbah township is provided in section four, with more specific issues identified in section five. Conclusions are presented in the final section.

2. Overview of the coal industry in Queensland

The production of coal is a major industry in Queensland, accounting for 40% of the state's merchandise exports by value in the year to August 2006, compared to 30.2% two years previously (OESR 2006a). A sharp rise in international demand in 2004, partly attributed to the growth in the Chinese economy, created increases in Australian coal prices (Figure 1).

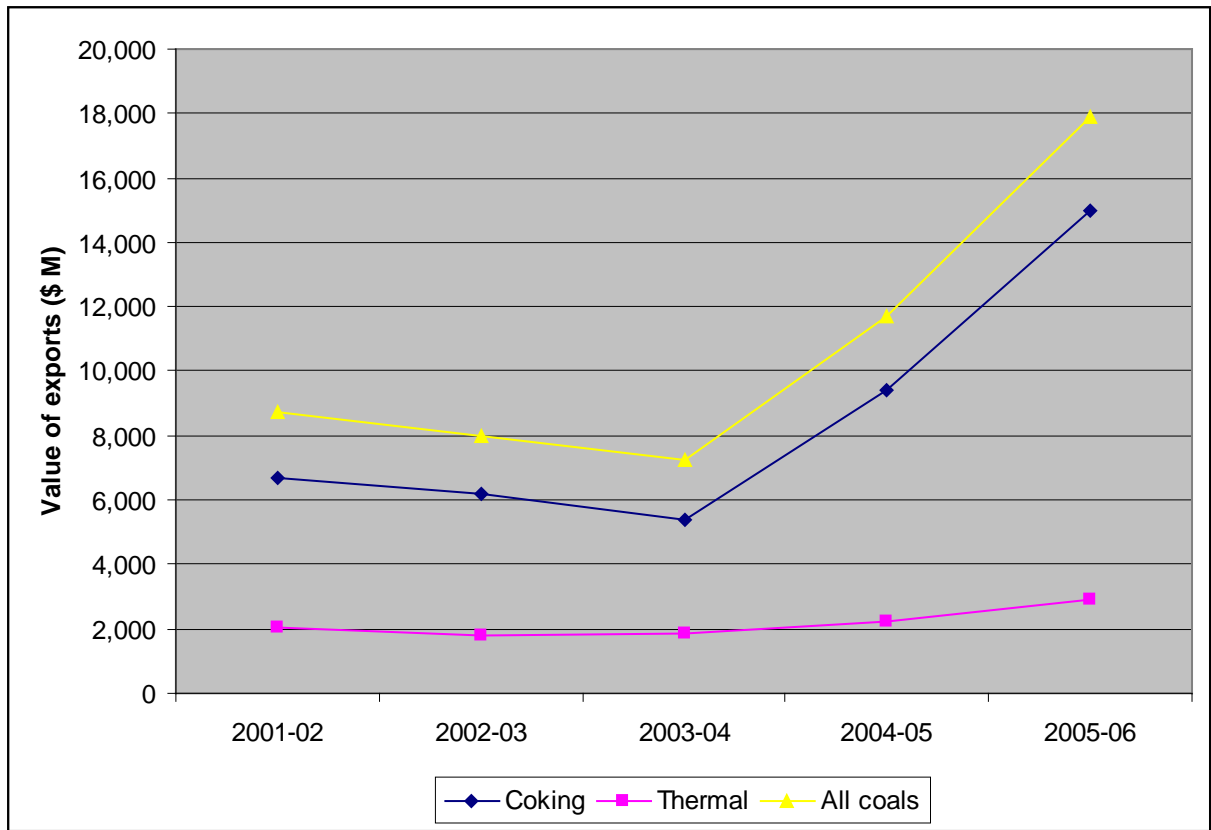
Figure 1. Free-on-board coal prices 2003 - 2006 A\$.



Data source: NRM (2006)

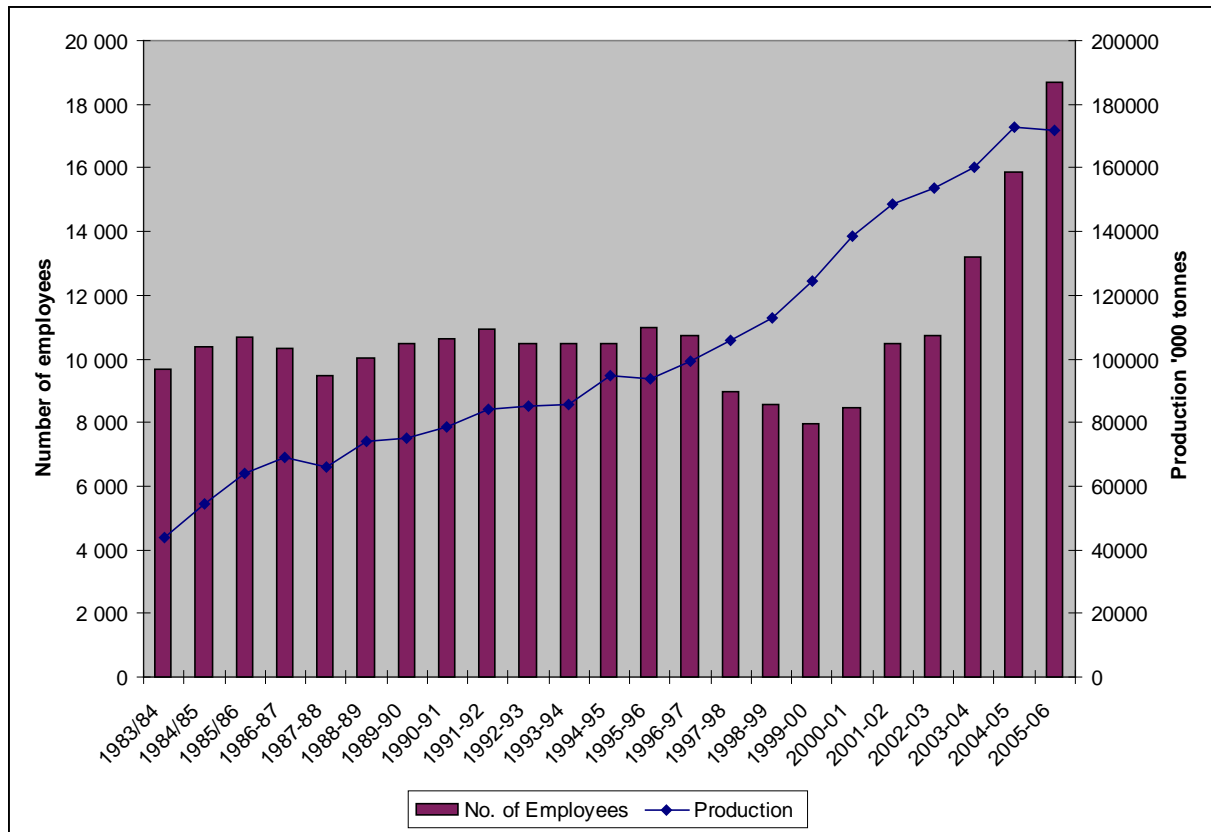
The increase in coal prices was largely responsible for increases in the value of coal exports from 2004 (Figure 2), although increases in production levels was also a contributing factor. In the 12 months to August 2006, Queensland exported \$14.5 billion in coal exports (OESR 2006a). The increases in price and profitability have stimulated further expansion of the industry and employment levels. Growth in industry output has occurred steadily since the early 1980s, with the production of saleable coal rising by 69% from 95Mt in 1994 to 160Mt in 2004 (Figure 3). Open cut mines were responsible for most of the increase in production, but the greatest rate of increase occurred in underground mines.

Figure 2. Value of Queensland coal exports 2001/2 to 2005/6



Data source: NRM (2006)

Figure 3. Queensland coal production and the number of employees, 1994-2006.

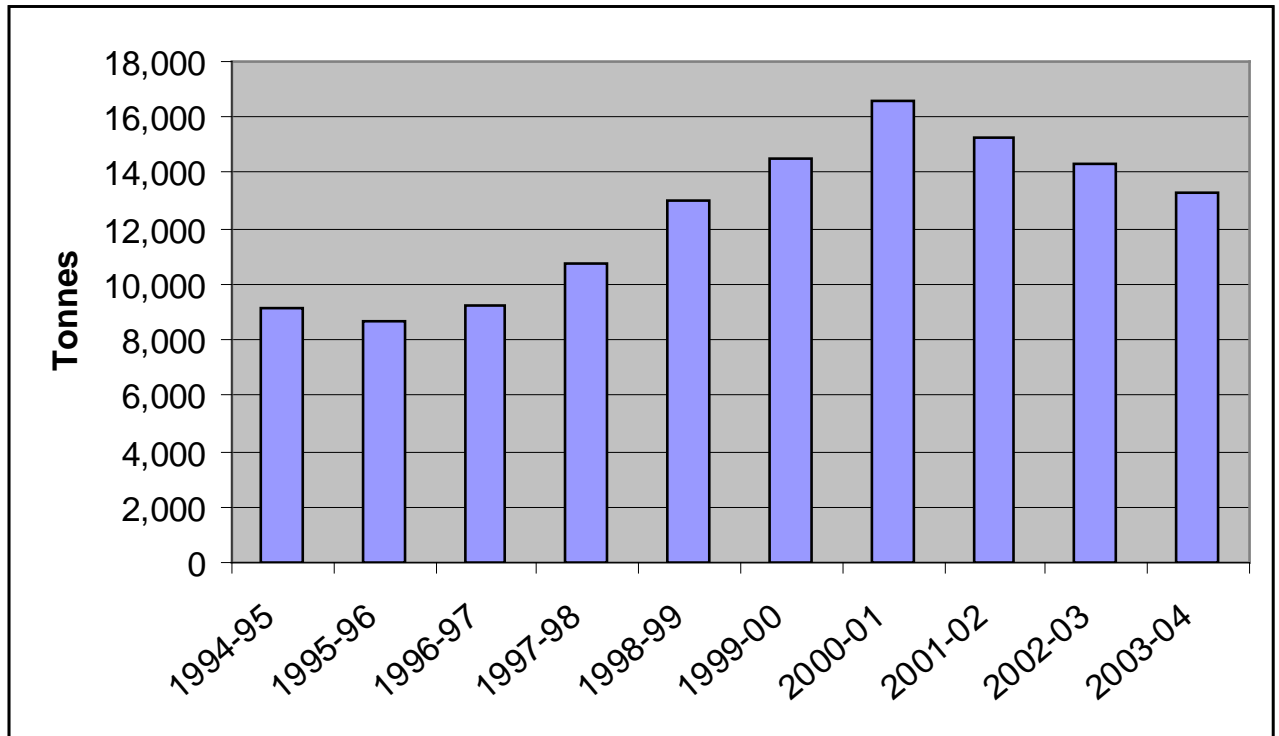


Data source: NRM (2006)

Employment levels in the coal industry have tended to fluctuate (Figure 3). A reform period during the late 1990s reduced the impact of union demarcation disputes on work practices, introduced contract labour at a number of mines, and changed a number of work patterns, including moves towards longer shift patterns. This reduced employment levels in the industry from the mid 1990s through to 2000. The material in the following section will demonstrate how this downturn was linked to a slump in housing prices and building approvals in some mining communities over the same period. Between 1999/2000 and 2005/6, direct employment in the Queensland coal industry grew by 134%, while flow-on employment to contractors and suppliers would also have increased.

The productivity in terms of saleable output per employee has varied substantially since 1994 (Figure 4). The lowest productivity over the ten year period from 1994/5 to 2004/5 in the coal mining industry was in 1995/6, when it was 8,709 tonnes per employee. The highest productivity occurred in 2000/1, with 16,579 tonnes per employee. Most of the productivity increases can be attributed to factors such as increased mechanisation and technical efficiency, and changed workforce practices. The decline in productivity since 2000/1 may reflect the development of less accessible reserves that were previously uneconomic to mine.

Figure 4. Total saleable output per employee, Queensland, 1994-2004.



Data source: NRM (2005)

3. The Bowen Basin region

The Bowen Basin in central Queensland produces about 85% of the coal in Queensland, with most of it being exported through ports at Gladstone, Mackay and Bowen. The Bowen Basin extends from Collinsville in the north to Moura in the south (Figure 5). Mining activities tend to be carried out by larger scale firms, with 43 coal mines operating in Queensland during 2004–5. Of these, 33 were open-cut mines and 10 were underground (NRM 2006).

Figure 5. Bowen Basin Area Map
Central Queensland Coal



Source: www.bowenbasin.cqu.edu.au (Bowen Basin Area Map 2003)

The Queensland Government has predicted that there will be a growth rate of 7% per annum in the coal industry from 2005 – 2010². Increases in production since 2000/1 (Figure 3) have largely come from expansion of existing mines as shown by increases in employee numbers (NRM, 2006). There was little change in the number of operating mines in the Bowen Basin from 2000/1 (34 mines) to 2004/5 (37 mines), but there are a number of current and potential developments across the Bowen Basin as producers respond to the increased demand for coal. NRM (2006) identify that a further 25 mines (21 in the Bowen Basin) were under development or active consideration by 2006. OESR (2006a) report two black coal projects worth \$685 million were completed in the second half of 2006, with a further \$10 billion of projects under construction or consideration. Projects under development in 2006 were expected to increase coal production capacity in the state by about 45 million tons a year by 2008, an increase of approximately 26% over 2005/6 (OESR 2006a). The developments are increasing the number of building and construction employees in the region, as well as increasing demands for a range of materials and services.

Exploration activities have also expanded. Expenditure on exploration increased from \$60.6 million in 2003/4 to \$88.1 million in 2004/5 (NRM 2006). Coal related infrastructure has also had to be expanded to cater for increased volumes of coal production. Key areas of infrastructure development include increases in port capacity at Bowen, Mackay and Gladstone, expansion and upgrading of the coal rail network, increases in rolling stock for the rail network, and improvements in water infrastructure. Several billion dollars in expenditure is planned by the Queensland Government for the Central Queensland region by 2010 to upgrade infrastructure (NRM 2006).

The increases in employment and expenditure being generated by coal mining boom will also impact on the communities of the region. The Bowen Basin region was serviced by 15 small communities with a combined population of 42,000 people in 2001 (ABS 2001). While some communities (e.g. Glenden, Moranbah) have been purpose-built to serve the mining industry, others (e.g. Springsure) are predominantly agricultural towns or regional service communities (e.g. Emerald) that have expanded to service the coal industry. Other key service centres are the larger communities of Rockhampton, Mackay, Gladstone and Bowen along the Queensland coast. These are developing as key bases for the mining industry and for many employees and service companies.

The importance of mining to regional economies is driven by both the increases in employment and the high incomes of employees in the mining sector. Average weekly earnings in the mining sector in Australia are higher than any other industry at \$1,424/week for a full-time employee in August 2001. Wage levels are approximately double weekly earnings in the retail trade and tourism industries (ACIL Consulting 2002). The high levels of income in the mining industry mean that flow-on expenditure levels are also high. Even though mining accounts for only 1 in every 14 jobs in Queensland, the industry accounts for significant job creation as income is spent in other industries (ACIL Consulting 2002). In terms of spending impacts on the Queensland

² Press release by the then Minister responsible for Mining, Tony McGrady 23/11/04.

economy, a job in mining is worth approximately two jobs in either the retail trade or tourism industries (ACIL Consulting 2002).

There have been changes in employment patterns within the coal industry over the past few years, with downstream impacts on social and demographic changes (Zheng et al. 2007). First, there has been increasing emphasis on the use of contractors to perform some or most of the mining operations since the changes in working arrangements in the late 1990s. This change has been driven by searches for efficiencies in production. Second, there is increased usage of variations on drive-in/drive-out (or fly-in/fly-out) operations, whereby mine employees use temporary accommodation for the period of their shift, often supplied by third-party commercial operators, rather than traditional more permanent residences and community facilities supplied by the mining company. Third, there has been more adoption of 'block shift' patterns in which employees are typically involved in 12 hour shifts for a certain number of days, followed by several days of break. In many cases, employees are able to stay in work camps close to the mine site when involved in a 'block shift'.

The reform processes in employment relations and work practices triggered a range of social and demographic changes across the Bowen Basin. The move to 'block' shifts and greater use of contractors made it easier for employees to base themselves at urban or coastal centres and commute to the mines or mining townships for work periods. The demographic changes involved population losses for many mining communities, with flow-on effects on housing markets and business activity. However at a regional level the population changes and spending activity would have evened out across smaller and larger centres. A key point to note is that the demographic changes were effectively a 'once-off', as there are no further reform processes available that would create the same demographic impacts.

One effect of the changes is that employees now have more choice about where they are located. Many employees now live in the larger centres or coastal cities and stay in temporary accommodation when they are completing a shift. PIFU (2006a) estimated that at June 2006, there were 10,763 non-resident workers in the nine key shires of the Bowen Basin, or an additional 14% of the Bowen Basin population moving in and out of the region for employment purposes. Another effect is that there has been some turnover of people across mining towns as many mining companies have restructured their operations. In the 1990s, there was an increased tendency for mining families to relocate to coastal areas leading to population declines in many of the smaller mining towns. For example, mining communities in the northern Bowen Basin experienced an overall loss of 1656 residents between 1991 and 1996, with most relocating to Mackay (DLGP 2002). These different demographic and employment patterns have meant that the recent coal boom has had very different regional impacts to earlier growth in the industry.

4. Overview of Moranbah and the mine operations

Moranbah is located 170km west of Mackay, and is part of the Belyando Shire. The township of Moranbah occupies some 8 square kilometers of Belyando's 30,281 km² region. Moranbah was originally established by Utah Development Company during the construction of the Goonyella-Riverside and Peak Downs mines in the late 1960s and early 1970s and predominantly remains a town supporting the local mining industry. Employment is strongly based on the coal industry and supporting businesses. A range of government and community facilities are provided for in Moranbah as well as a number of accommodation types. Moranbah has day care facilities, kindergarten, preschools, two primary schools, high school, TAFE annex and Open Learning facilities. The town also has a large range of sporting and recreational facilities as well as community groups. The health facilities include hospital, mental health workers, youth workers, dentists, optometrist, doctors, physiotherapists and alternative practitioners as well. There are police, fire and ambulance services available as well.

4.1 Population

As at 30 June 2005, the estimated resident population of the Belyando Shire was estimated at 10,651 persons, with some 6,844 persons of that figure residing within the township of Moranbah. This represents 0.3 per cent of the State's population (PIFU 2006b). The annual average rate of change in population in the Belyando Shire between 30 June 2000 and 30 June 2005 was estimated at 1.1 per cent, compared with 2.2 per cent for the State.

Population projections published by PIFU (2006b) predict that the population of the Belyando Shire will increase from 11,219 in 2006 to between 14,500 and 17,449 in 2026. The annual average growth rate for this period is projected to be 2.32% with a peak of 7.5 % during the five year period between 2006 and 2011 compared with an annual average growth rate of 1.7 per cent for the State. The median age of Belyando Shire's population is projected to increase by 3 years from a median age of 31 years in 2001 up to a median age of 34 years in 2026.

Population forecasts can be sensitive to a number of economic and demographic factors. To reflect some of the uncertainties in the forecasts, PIFU (2006a) provided a summary of low, medium and high growth forecasts for the Belyando Shire. This information is shown in Table 1 and Figure 6.

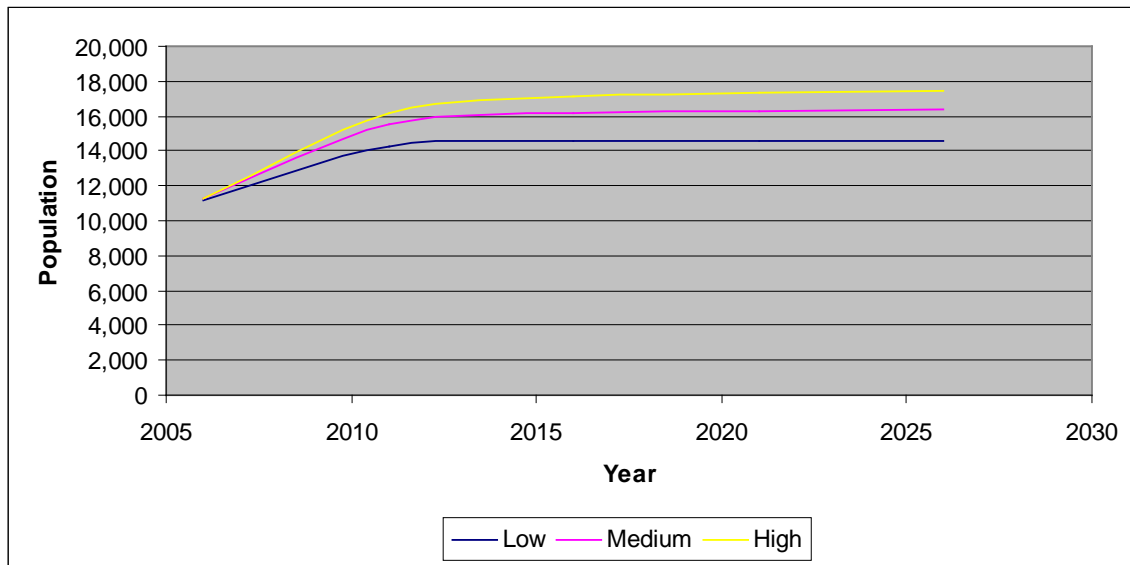
Table 1: Projected Population of Belyando Shire 2006-2026

Year	Projected Population			Avge Annual Change % (high Series)
	Low	Medium	High	
2006	11,219	11,251	11,294	2.6
2011	14,263	15,524	16,193	7.5
2016	14,596	16,154	17,115	1.1
2021	14,584	16,292	17,314	0.2
2026	14,536	16,380	17,449	0

Source: PIFU (2006a)

Given the structure of the region, most of the growth could be expected to occur in the Moranbah township, so the variations in population forecasts can mostly be attributed to the township. Projections from PIFU suggest that the population of Moranbah will increase from 6,280 in 2001 to an estimated 8,707 in 2006 and 11,070 in 2011. By 2021, the population is estimated to be 11,750.

Figure 6: Projected Population for Belyando Shire 2006-2026



Source: PIFU (2006a)

As well as the resident population, the Belyando Shire accommodates a number of non-resident workers. Many employees now live in the larger centres or coastal cities and stay in company accommodation or workcamps when they are completing a shift. PIFU (2006a) estimated that at June 2006, there were 2,119 non-resident workers in the Belyando Shire on top of the estimated 10,503 permanent residents. Moranbah was estimated to have 6,749 permanent residents and 1,915 non-resident workers at any one time. Clermont was estimated to have 2,081 permanent residents and 204 non-resident workers, and the rest of the shire was estimated to have 1,673 permanent residents and zero non-resident workers.

4.2 Housing

Like many towns in the Bowen Basin, the increase in mining activity and population has impacted on housing markets, with increases in house prices and housing rents. The increased workforce, particularly those associated with contractors, exceeded available housing levels in most towns. PIFU (2006a) reported that there were 1,595 single persons quarters available in the Belyando Shire at June 2006, with an approximate occupancy rate of 83%. There were a further 912 rooms in hotels/motels, caravan parks and other private accommodation in the shire, with an occupancy rate of 94% at June 2006 (equally placed third highest with Duaringa Shire behind Broadsound and Nebo Shires). 78% of those rooms were occupied by non-resident workers or other staff on a long term basis.

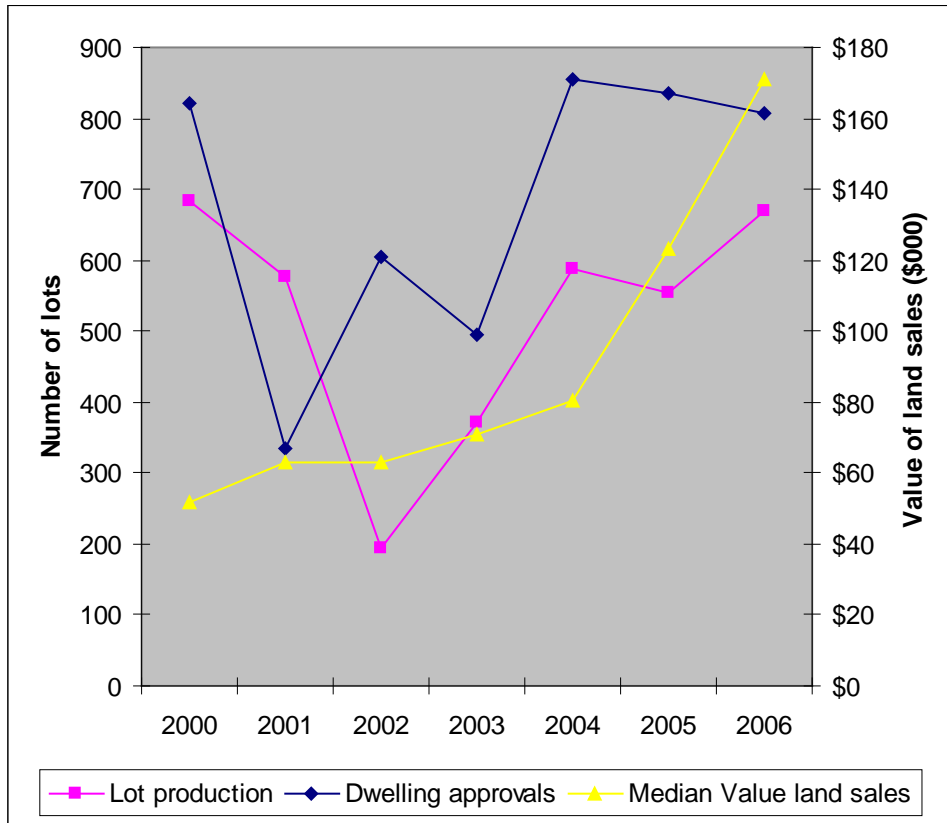
The high demand and limited supply have been impacting on price levels in the region. There have been anecdotal reports of rents in Moranbah being as high as \$700 to \$900 per week for a four bedroom house. OESR (2006b) reported that the cost of housing in Moranbah in May 2006 was 95.5% more expensive than Brisbane, reflecting the high demands. Some indication of the effects of higher demands can be gained from the surrounding area. The unimproved land values in the township of Nebo increased by 92.2% from October 2002 to 2005, while rural residential properties around Nebo and Coppabella rose 25% (NRW, 2005).

PIFU (2005a) report that information provided by mining companies and local governments suggest that local resident population increases would be larger if appropriate housing stock was available. In Shires such as Belyando, Broadsound and Nebo, additional residential land and housing is required to accommodate the increase in employment due to mining expansion and the development of new mines. Research suggests that many mine workers live in temporary accommodation at or near the mine site or in the closest town for the duration of their work roster. Many then travel to their permanent residence located usually in coastal centres such as Mackay or Sarina Beaches (PIFU, 2005a).

In previous mining upturns, mining companies tended to provide housing for employees. However, following the reform process of the late 1990s, the trend was for third-party commercial operators to provide an increasing proportion of worker accommodation, particularly in the form of 'work camps'. As well, a much higher proportion of workforce responsibilities now fell on subcontractors. While many mining companies still provided workcamp accommodation, they did not cater for all employees or those of subcontractors. The resulting high demands for private housing have not been immediately met by local housing markets.

Evidence for increases in housing land development for the regional centre of Mackay is shown in Figure 7. These show that residential land values have effectively tripled from 2001 to 2006, accompanied by increases in both lot production and dwelling approvals.

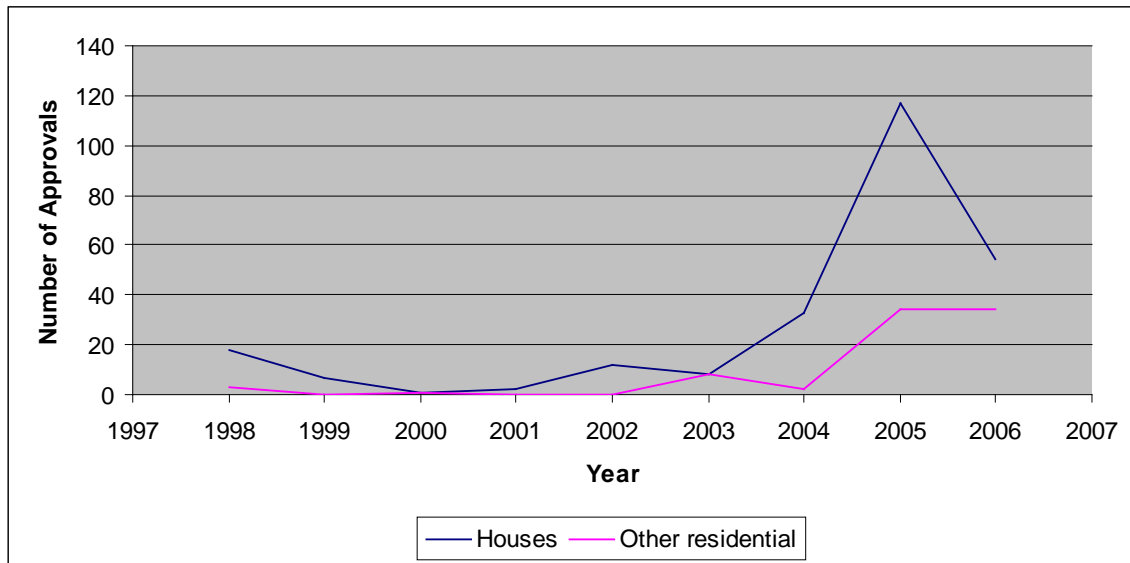
Figure 7. Residential land development, Mackay.



Data sourced from PIFU (2006b).

By contrast, the level of building approvals in the Belyando Shire has come from a very low base to show a marked increase in activity since 2003 (Figure 8).

Figure 8: Residential approvals, Belyando Shire 1998-2006



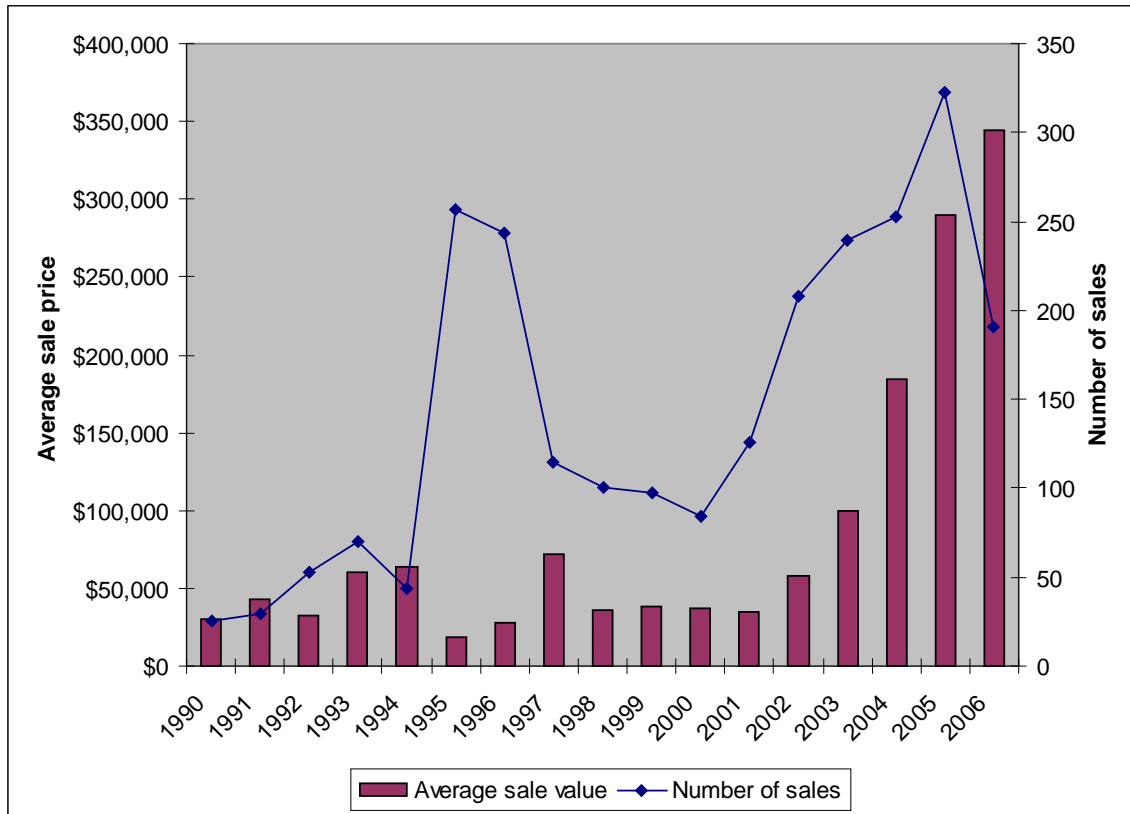
Data sourced from OESR (2006c).

Dwelling approvals decreased in Belyando Shire in the year ending June 2006 with 88 approvals, 61.4 % of them for separate houses (PIFU, 2006c). Compared to 151 approvals in the previous year, these figures represent a decrease of 41.7 % in dwelling activity.

The impacts of variable demand for housing on property prices in Moranbah can clearly be seen in Figure 9. A slump in housing prices during the mid 90s was generated by the corresponding peak in the volume of properties sold³. The recent increase in activity in the mining sector and subsequent housing demands is clearly reflected in the rapid increase in both average sales value and sales numbers from 2002. In the five year span from 2001 to 2006 the average sale price for a single dwelling unit (house) in Moranbah increased from \$35,169 to \$344,731. While average sales prices continued to increase however the actual number of properties sold decreased from 323 in 2005 to 191 in 2006.

³ As a part of the restructuring and reform process in the late 1990s, mining companies sold a number of company houses onto the private market.

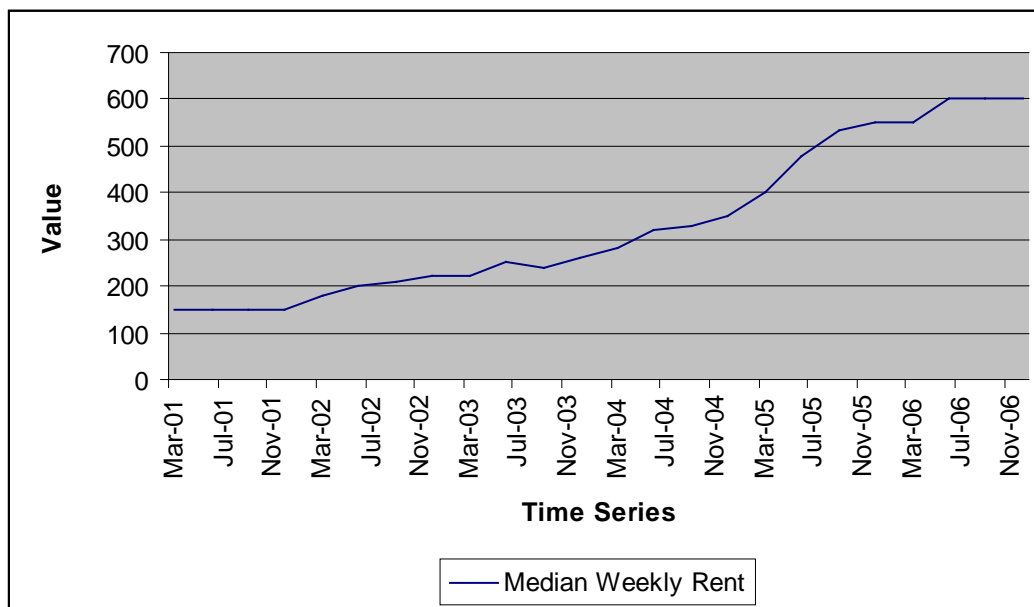
Figure 9: Average Sales Figures for Houses in Moranbah 1990-2006



Data sourced from PDS (2006)

A corresponding increase in demand for rental accommodation is equally reflected in a steady increase in rental prices. Median rents for a 3 bedroom house in Moranbah has increased some 400 %, rising from around \$150 per week in March 2001 to around \$600 per week in December 2006 (Figure 10). Table 2 demonstrates the increase of median weekly rents in Moranbah in comparison with two other regional towns (Emerald and Mackay) experiencing similar growth and housing demand.

Figure 10: Median Weekly Rent 2001-2006



Data sourced from RTA (2007)

Table 2. Median weekly rent for September Quarter 2004-2006

Town	Sept Quarter 2004	Sept Quarter 2005	Sept Quarter 2006
Emerald ⁴	250	300	350
Mackay	220	260	320
Moranbah	325	507	600

Data sourced from RTA and RTA (2006)

Housing shortages and high rental costs can create some offsetting social impacts. High rental levels made it uneconomic for people to work in low income jobs, reduce the disposable income of people on lower incomes, and create pressures for people to relocate to other centres. An outcome is that the demographics of a community can change where the group that remains are those with employment and higher incomes.

⁴ RTA report that the relatively small number of bond lodgements for properties in these areas make median rent values less reliable

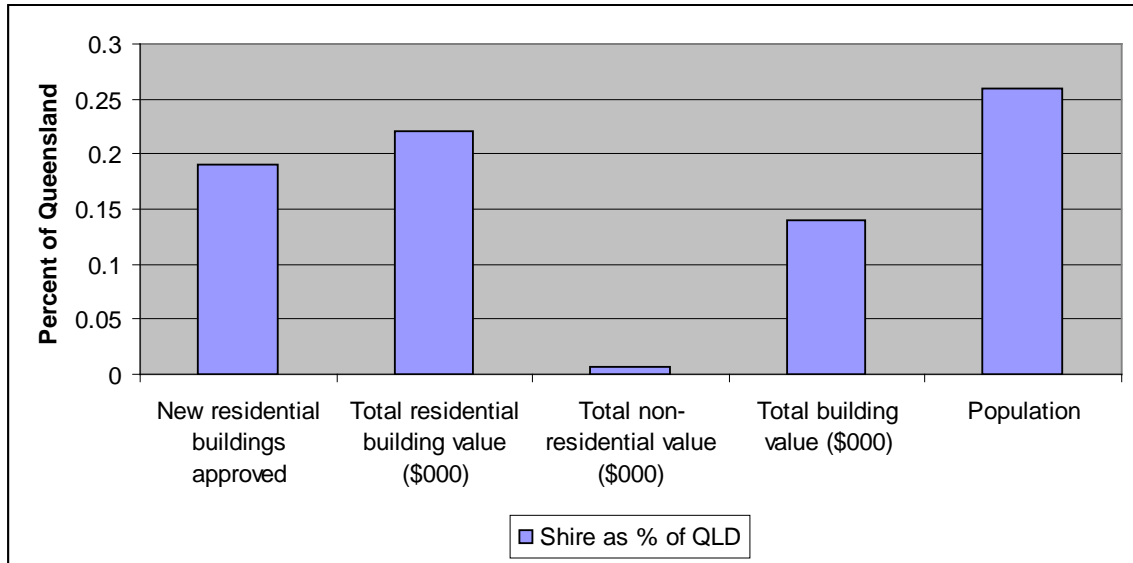
Table 3. Residential approvals in Belyando Shire, Mackay region and Queensland: Year ended September 2006.

	Belyando Shire	Mackay Region	QLD	Shire as % of region	Shire as % of QLD
New residential buildings approved	74	1,654	37,390	4.47	0.19
Total residential building value (\$000)	20,264	441,084	9,117,537	4.59	0.22
Total non-residential value (\$000)	459	185,626	6,200,840	0.25	0.007
Total building value (\$000)	20,722	626,710	15,318,378	3.31	0.14
Population	10,651	150,978	4,041,368	7.05	0.26

Data sourced from OESR (2006c).

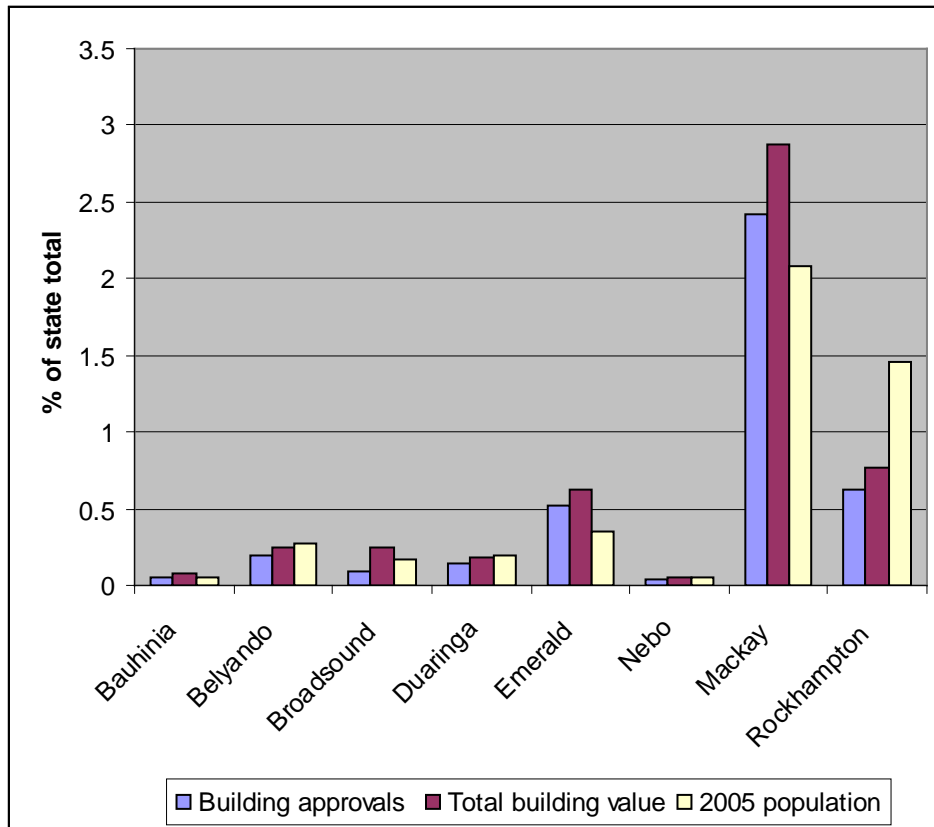
The level of building approvals demonstrates that while there has been an industry boom affecting Moranbah, it has not translated to an expected level of economic development. In the year to September 2006, Moranbah's share of building approvals and building value was well below the proportion of population at both regional and State levels (Table 3 and Figures 11 and 12). Although house prices and rents are at record levels, this has not translated through to an expected increase in the supply of new housing. When this exercise is extrapolated to other centres in the region, it is clear that there is major building activity relative to population in Mackay and Emerald, with relatively low levels of activity in most mining communities. The conclusion to be drawn is that many economic benefits of the mining boom are concentrating in the regional centres (as well as major urban centres further away), while many of the smaller centres have very limited impacts. This mining boom is very different to earlier developments in Queensland because of lower levels of population impacts and economic benefit on smaller communities in favour of larger regional and urban centres.

Figure 11. Population and housing developments in Belyando Shire at September 2006 as a percentage of Queensland activity.



Data sourced from OESR (2006c).

Figure 12. Building activity in select Bowen Basin and regional centres, 2005.



Data sourced from OESR (2006c).

4.3 Employment

As at the 2001 Census, mining was the largest employer in the Belyando Shire accounting for some 32.9 per cent of the region's employed labour force (Table 4). Other industries with relatively large numbers of employed persons included agriculture, forestry and fishing at 11.5 per cent, retail trade (9.5 per cent) and construction (5.9 per cent) (OESR, 2006c). The highest degree of specialisation in the region (as indicated by a specialisation ratio above 1) occurred in the mining and agriculture, forestry and fishing industries.

Table 4. Employment by industry in Belyando Shire and Queensland as at 2001 Census

	Belyando Shire		Queensland		Specialisation ratio (Belyando)
	Number	%	Number	%	
Agric, Forestry	559	11.5	76,532	4.9	2.4
Mining	1,591	32.9	19,286	1.2	26.7
Manufacturing	161	3.3	167,380	10.7	0.3
Electricity, Gas, Water	21	0.4	12,359	0.8	0.6
Construction	286	5.9	111,209	7.1	0.8
Wholesale Trade(a)	223	4.6	79,718	5.1	0.9
Retail Trade	461	9.5	239,615	15.3	0.6
Accommodation, cafes & restaurants (b)	200	4.1	88,381	5.6	0.7
Transport and Storage	195	4.0	77,587	4.9	0.8
Communication Services	33	0.7	23,016	1.5	0.5
Finance and Insurance (c)	46	1.0	44,582	2.8	0.3
Property and Business Services	229	4.7	153,864	9.8	0.5
Public Administration, Defence	110	2.3	75,048	4.8	0.5
Education (d)	272	5.6	118,896	7.6	0.7
Health and Community Services	213	4.4	151,029	9.6	0.5
Cultural and Recreational Services (e)	39	0.8	37,341	2.4	0.3
Personal and Other Services	109	2.3	57,662	3.7	0.6
Non classifiable & Not stated	18	0.4	35,379	2.3	0.8
Total	4,841	100.0	1,568,864	100.0	1.0

Source: Australian Bureau of Statistics as taken from OESR (2006c).

Statistics from the Australian Taxation Office show that the mean taxable income of taxpayers in the Belyando Shire region for the 2003-04 financial year was \$57,616-. This figure was \$17,579- more than the equivalent Queensland figure (\$40,037) (OESR, 2006c).

4.4 Mining

Key mining operations that are based close to Moranbah or in the Belyando Shire are shown in Table 5.

Table 5. Mining operations close to Moranbah or in Belyando Shire in 2006/07

Mine name	Coal type	Mining by	Market	Owner	Operator
Goonyella	Coking	Open cut	Export	BMA	Goonyella/Riverside Mine
Broadmeadow	Coking	Underground	Export	BMA	Goonyella/Riverside Mine
Moranbah North	Coking	Underground	Export	Anglo Coal Australia.	Anglo Coal (Moranbah North Management) P/L
Peak Downs	Coking	Open cut	Export	BMA	Peak Downs Mine
Carborough Downs/Broadlea North	Coking and PCI/thermal	Underground, with some open cut			Nebo Central Coal Joint Venture
Millenium	Coking, thermal	Open cut			Millenium Coal
Poitrel	Coking, PCI, thermal	Open cut			BMA on behalf of BHP Mitsui

Source: NRM (2006)

Key prospects for mines that are close to Moranbah or in the Belyando Shire include:

Table 6. Mines under development or consideration close to Moranbah or in Belyando Shire

Mine name	Coal type	Mining by	Location	Shire	Operator
Grosvenor	Coking	Underground	Immediately north of Moranbah township	Belyando	
Isaac Plains	Coking and PCI/thermal	Open cut	About 7 km east-north-east of Moranbah	Belyando	AMCI Coal Holdings P/L on behalf joint venture partners Bowen Central Coal P/L and Aquila Coal P/L

Source: NRM (2006)

The number of mines developed, under development or being planned demonstrates that mining has emerged as a major industry in the Moranbah/Belyando area. Employment numbers for past, existing and prospective mines in the Moranbah region (within 50 kms

radius) are summarized in the following Table. This shows that core employee numbers in the coal industry in the area increased from 2,890 employees in 2002-03 to 6,190 in 2006-07, with prospective increases to 7,560 employees by 2010.

Table 7. Estimated employee numbers for mines in Moranbah region

	Employment		
	2002-2003	2006-2007	2010
Burton/Plum Tree	370	470	400
Goonyella/Riverside	650	2650	2500
Moranbah Nth	450	300	300
Coppabella	300	300	300
Moorvale	90	150	200
North Goonyella	300	620	600
Peak Downs	570	1000	1000
South Walker Creek	160	120	120
Isaac Plains		50	50
Carborough Downs/Broadlea North		150	150
Millennium		160	160
Poitrel		200	200
<i>Sub-Total</i>	2890	6170	5980
New developments			
Olive Downs			100
Goonyella expansion			200
Carborough expansion			50
Isaac Plain expansion			50
Grosvenor			300
Moranbah South			300
Moorvale West			200
Daunia			120
Wards Well			200
Lenton			60
<i>Sub-Total</i>			1580
Total	2890	6170	7560

Source: Estimates generated from NRM (2006) data and other sources.

5.0 Identifying social and economic impacts

In 2005 the Moranbah Growth Management Group was formed as part of the development of a framework for the sustainable management of mining towns referred to as the Sustainable Futures Framework for Mining Towns. The Framework was designed to assist local government, state agencies, mining companies and communities to form

appropriate strategies for sustainable planning of towns through addressing the following issues:

- Population and economic impacts from mining expansion
- Avoidance of encroachment of mining activities into sensitive areas and vice versa
- Determination of growth options for land use and infrastructure required to support growth
- Identification of land use required for social services
- Encouragement of the mining industry to minimize adverse impacts on the environment and nearby towns
- Identification of opportunities to seek risk sharing partnering arrangements

The key role of the Moranbah Growth Management Group within this framework was to develop short, medium and long term options that contribute toward strategic development that addresses growth management issues. The key areas affected by Moranbah as a result of expansion in the mining sector can be summarised under the following headings:

- Local and regional economic development
- Employment and skills
- Government coordination and service provision
- Housing demand and supply
- Housing choice, affordability and ownership
- Rental housing and short term accommodation
- Strategic planning and infrastructure
- Environmental impacts and the EIA process for mining projects

Rolfe et al. (2003) analysed the social and economic impacts of mining on the Nebo community. Key topic areas that they identified in their study included:

- Economic impacts
- Employment and demographic impacts
- Human services
- Housing
- Community infrastructure
- Crime
- Community participation and integration
- Traffic and fatigue
- Community identity
- Economic and industrial base
- Mine-community relationships
- Cultural heritage and native title
- Environment

These are issues that need to be addressed and evaluated in an impact assessment process and in the discussion of future development options for the community.

6. Conclusions

The resource boom in the coal industry is having a number of positive economic and social impacts on the Bowen Basin region. However, a notable feature of this mining boom is the extent to which the economic stimulus has transferred to regional and state levels as compared to the smaller mining towns in the Bowen Basin. This has been driven by two key organisational and demographic trends. First, the move to more flexible work operations and the pattern of shift work blocks has meant that large numbers of mining employees base themselves at the coastal and urban centres and travel out to the mining communities for shift work blocks. Increases in workforce requirements have been largely catered for by the construction of workcamps rather than the construction of new housing. Second, a greater reliance on contractors and mining supply industries has stimulated growth in the mining support sector, which has tended to be based in larger communities and strategic centres. Both of these trends have meant that a large proportion of the direct and indirect economic impacts of the boom have bypassed the smaller local economies and focused immediately on the larger regional centres.

While the mining boom has been generally positive for the Bowen Basin and Central Queensland region, there have been some offsetting economic and social impacts in the smaller communities such as Moranbah which service the mining industry. The most serious impacts have occurred through housing markets in smaller communities, where the higher rents and unavailability of housing have made it difficult for people on lower incomes to continue living in towns, and have made it harder for other industries to attract new workers. The data indicates that despite the town being in the one of the fastest growing regions of the state with further development prospects, the level of housing development in Moranbah is below the state average on a per capita basis.

There have also been concerns over planning and coordination issues, about the way that the impacts of new developments are assessed, and about how responsibility for how new infrastructure is funded and developed. The concerns are that local communities may be shouldering many of the costs of accommodating new developments while the benefits flow more broadly to regional and state centres.

These issues are relevant to Moranbah, which is central to a number of new mine developments and mine expansions in the northern Bowen Basin. The results of this desktop study suggest several issues need closer attention. These include :

- (a) identifying and managing the social and economic impacts that have accompanied the recent resource boom to date,
- (b) Predicting the future impacts associated with further mine developments,
- (c) Understanding why current mining developments have had relatively low impacts on population and housing growth,

(d) Identifying suitable mine development options for Moranbah and its associated community.

These issues will be explored in subsequent reports that will be issued from this research project.

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