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Regional Development Australia
DARLING DOWNS AND SOUTH WEST INC

Transitioning Regional Economies study
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Transitioning Regional Economies – Commissioned Study

Dear Commissioners,

Please find attached our submission to the Transitioning Regional Economies study.

Our submission is a report we had commissioned during the peak of the Coal Seam Gas (construction) developments in the Surat basin, in southern Queensland (2011).

That report was commissioned to explore the outcomes such rapid developments had on small regional communities, particularly in the historically agricultural areas of the Darling Downs and South West.

While hindsight allows us to look back and provide commentary on the impacts of this development and argue the community benefits, I thought it somewhat retrospective the submit the attached report as a 'then and now'.

Yours sincerely,

Bryan Gray
Executive Officer

The Mineral Resource Boom
and the
Economy of South West Queensland
2011

A report jointly commissioned by:

Regional Development Australia - Darling Downs & SW

for advocacy on behalf of:

The Shires of Bulloo, Quilpie, Paroo, Murweh and the Maranoa Regional Council

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While the National Institute endeavours to provide reliable forecasts and believes the material is accurate, it will not be liable for any claim by any party acting on such information.

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Brief summary

As outlined in the *State of the Regions Report* for 2911-12, the current national resource boom is patchily distributed, with some regions reporting frenetic activity and others depressed as a side-effect of the boom. South West Queensland lies on the margins of the boom: it is not involved in the booming iron ore and coal export industries, but parts of it produce petroleum, natural gas and coal seam methane.

To ensure that benefits continue, it is necessary to plan for what will happen after the boom has run its course. There are two main concerns.

- Infrastructure should not be allowed to deteriorate as a result of boom usage or the diversion of resources to the boom.

- The boom should not be allowed to detract from the productive capacity of the pastoral, tourism and other non-mineral resource industries in which the region has expertise.

Measures canvassed in this paper include the following.

- Ensuring that the mineral resources industry makes appropriate contributions to local infrastructure through a rural equivalent of the urban developer charge system.

- Ensuring that the mineral resources industry makes appropriate direct contributions to local government.

- Increasing state royalties to fund a Regional Development Trust, as pioneered in WA.

- Financial regulation to require appropriate financial intermediaries to insure housing values in the towns of the region.

- Investment to improve the quality of transportable homes.

A further measure – review of Income Tax Zone Rebates – is canvassed in a complementary paper.

1. The mineral resource boom and the economy of South West Queensland

Geoffrey Blainey's popular history of Australian mining is entitled *The Rush that Never Ended.* Despite this title, it is actually the history of a sequence of rushes, some small and local in their effects but a few of them major to the extent that they changed the course of national economic history. These major rushes – mining booms - were separated by decades when other industries took the lead in Australian economic development. Over much of the nineteenth century, before Australia became an integrated economy, the pastoral industry was in the lead in all six colonies, while farming provided a solid basis for development in most colonies in the late nineteenth and into the twentieth century. The prosperity of the post-war period in the mid twentieth century was based on manufacturing. However the late twentieth century saw a revival in the exploitation of mineral resources (mining is now something of a misnomer – underground mining has declined in favour of quarrying and oil and gas wells). The Poseidon boom was followed by the first Pilbara boom, after which there was a lull followed by the present resources boom.

2. The national resources boom

The current Australian resources boom is a response to an unexpected increase in the international prices of three minerals:

- the USD price of iron ore has risen more or less continuously since 2004 and is now nearly thirteen times its level in 2003;
- the USD price of thermal coal rose from 2004, spiked in 2008, fell but has now recovered to over five times its level in 2003; and
- the USD price of liquefied natural gas (LNG) rose from 2004, spiked in 2008, fell but has now recovered to 3.5 times its level in 2003.

Though part of each of these increases reflects the fall in the value of the USD, the increases have been substantial whatever the currency used to measure them. Australia has resources of all three minerals and, once it was realised that prices were going up despite the Great Financial Crisis, investment boomed in increasing Australian production capacity. The reason for the high prices lies primarily in demand from China arising from rapid economic growth.

In describing the effects of a resources boom, it is important to keep an eye on the future. The very word 'boom' implies subsequent bust. There are some who believe that the current level of activity in the mineral resource industries is not a boom but can go on forever. However, the historical record is that peaks in mineral prices have been followed by periods of lower prices as international supply has caught up with demand. There is every reason to expect that this will occur in the present case, if only because the Chinese are investing heavily in expanding supply – partly in Australia but also in other mineral-rich countries. When prices fall the industry responds by reducing investment in capacity expansion and the boom ends. Regions which prospered during the boom are thrown back on other sources of employment.

The rush of the current resources boom is well measured by gross operating profits in the 'mining' industry, which as defined by the ABS includes all mineral resource exploitation. In 2011 profits in the industry were running at the rate of around $94 billion a year – nearly four times their level a decade previously. In 2011 profits in the mineral resource sector accounted for 32 per cent of all business operating profits (excluding the agricultural sector and most of the finance sector), a significant increase from their share of 19 per cent in 2001. This increase in profit share was largely at the expense of manufacturing, which had about the same share of non-agricultural, non-financial profits as mineral exploitation in 2001 but declined to 11 per cent in 2011(ABS 5676.0). There was a causal relationship at work here:

- the Reserve Bank of Australia responded to the resources boom by raising interest rates. The currency market responded to this and to the increase in foreign investment in Australia by raising the Australian exchange rate, which reduced the Australian dollar prices of imported manufactured goods. Australian manufacturing industry found itself unable to compete; and
- the rise in resource exploitation profits generated a boom in resource-related investment and hence in the demand for construction labour. Though there has been no general wage breakout during the boom, there has been competition for skilled labour, to the detriment of manufacturing.

Though the primary victim of the resource boom has been manufacturing, the high exchange rate has penalised export industries across the board, including resource exploitation itself – though the penalty is of little concern to the mineral resource industry since it has been counterbalanced by booming prices and in any case the industry is largely overseas-owned and thinks in terms of US dollars, Euros, Yen or Yuan. The penalty has been severe for tourism and export education but because of the hazy definition of these industries in official statistics is not well documented.

The farming and pastoral industries are also trade-exposed, but have been relatively well placed to survive the high exchange rate, for three main reasons.

- The agricultural and pastoral industries have a long history of exposure to fluctuating world prices, including (since 1983) fluctuations due to the floating exchange rate. Through long and sometimes bitter experience they are better prepared to deal with fluctuating prices than manufacturing and service industries.

- The agricultural and pastoral industries likewise have a long history of exposure to good and bad seasons, which has again forced resilience upon them. It has helped that in much of Australia seasonal conditions have been reasonably good in the past couple of years so that increases in quantity sold have helped to counteract price reductions due to the spike in the exchange rate.

- International prices for a number of key pastoral and agricultural commodities have been reasonably favourable over the past few years. Thus in 2011 the US dollar prices of beef and fine wool were sufficiently high to offset the exchange rate so that Australian dollar prices were comfortably above the low levels suffered in the 1990s and up to 2005.

These factors have so far sheltered many agricultural and pastoral businesses from the adverse effects of the resources boom expressed in the high exchange rate and competition for labour.

A further potential adverse effect of resource exploitation can be important for the agricultural and pastoral industries, as well as for tourism, though it is not important for manufacturing or export education. This is the environmental impact of resource exploitation. For example, several decades ago the mining of beach sand in Queensland was curtailed because of its serious environmental effects including their impact on tourism. More generally, resource exploitation can directly disrupt rural production. Mineral exploration can involve entry to farm properties which affects the use of the properties while mining and even more quarrying can debilitate farmland, pre-empt water supplies and pollute the creeks and ground water. The various state mining acts provide for compensation but farm organisations argue that the compensation is insufficient. More fundamentally, they claim that it is not right that mining should have the automatic precedence over agriculture as a land use granted to it by the current state mining acts.

The rapid changes in relative industry competitiveness which have resulted from the resources boom have had pronounced regional effects. Activity has boomed in the mineral resource regions and slumped in regions based on manufacturing and tourism. The effects in the agricultural and pastoral regions are more complex, partly because the high exchange rate has been partially offset by increased international prices and partly because several agricultural and pastoral regions also host mineral resources.

The prospect of an end to the boom is of great importance in assessing its effects. If the increase in the profitability of mineral resource exploitation is permanent, it is rational to divert resources from less-profitable industries to the new high-profit industry. However, if the high profits are temporary, the diversion of resources may come to be regretted once the boom ends and the country once again has to depend on its established industries. Thus a boom which weakens the other industries, e.g. by raising wage costs so that routine maintenance is postponed, may turn out to be costly in the long term, since it will not be so easy for the established regional industries to take up the slack when the boom ends. On the other hand, it is possible for boom investment to strengthen the other industries, e.g. by improving general transport infrastructure. If this happens its long-term effect is likely to be positive.

3. South West Queensland

As an example of the effects of the resources boom in a largely pastoral region, part of which has been directly affected by the boom, we take South West Queensland, here defined as five local government areas (LGAs) – Bulloo, Maranoa, Murweh, Paroo and Quilpie. This region lies north of the NSW border and forms a strip approximately 350 km wide, stretching roughly 800 km east from the South Australian border. Four of these LGAs are legally Shires while Maranoa is legally a Regional Council, but, with apologies to Maranoa, in this report we will use the term 'shire' to refer to each of them. Each shire is geographically large, typically 200 km east to west and 200 km north to south. The estimated resident population of the region is 21 600 people (a more accurate count will soon be published from the 2011 Census). More than half these people – 13 400 – live in Maranoa. The largest town in Maranoa, and indeed in the region, is Roma, with a population of around 6000. The next most populous shire is Murweh, which accounts for nearly a quarter of the population of the region and has the second-largest town, Charleville, with a population of around 3200. Paroo follows, with a shire population of 1900 including the region's third largest town, Cunnamulla (population 1200). Quilpie shire has a population of around 1000 and Bulloo shire a resident population of less than 400. The region has one other town of around 1000 population – Mitchell, in Maranoa shire. The largest town in Quilpie shire is Quilpie, population around 560, while the largest (some would say only) town in Bulloo shire is Thargomindah, population 200.

Over the past two decades the population of the region has increased gently, though it is best described as stable.

3.1 The economy of South West Queensland

The market value of output produced in the region, excluding corporate profits, is estimated at $\$_{2008\text{-}09}$ 918m, of which roughly 60 per cent originates in Maranoa, 19 per cent in Murweh, 8 per cent each in Quilpie and Paroo and 4 per cent in Bulloo. The value of output per person employed is highest in Paroo and Quilpie (around $108 000 per worker). This is something of a statistical artefact, since output in these shires is dominated by the pastoral industry much of which is run by family businesses whose profits are included in the value of production. The value of output per person is somewhat lower in Bulloo and Maranoa, between $80 000 and $90 000 per person employed. The gas industry is important in these shires, but its corporate profits are not included in the value of production because they are difficult to allocate geographically and in any case do not generate incomes available for local distribution. Finally, Murweh has the lowest value of output per person employed, a little under $70 000, due to its hosting low value-added industries such as the abattoirs and various service industries.

Across the region as a whole, approximately 7 per cent of the value of production is not available for distribution within the region since it is claimed by workers who live elsewhere. The remaining income generated within the region is split more or less equally between wages/salaries and business income. In 2010-11 residents of the region paid around $160m in income tax but received around $180m in social security payments. The balance differed between the shires. Income tax payments by Murweh residents comfortably exceeding their social security receipts but it was the other way round in Paroo, with the position in the remaining shires being more or less balanced. Residents of the region also paid indirect taxes but benefited from the provision of government services which generated employment in public administration, police, education and health services. This employment accounted for nearly a quarter of total jobs, and its location was determined largely by government policy on service provision and in turn by the location of people who required service. The

underlying reason why people live in the region is the incomes generated by its economic base.

3.2 The economic base of South West Queensland

Residents of the region earn incomes from the export of the products and services of three main industries to people outside the region. These economic base industries account for around one-third of total employment in the region, with other support and service industries accounting for the remaining two thirds. We will first consider the long-term economic mainstay of the region – the pastoral industry – and then mention tourism and support services before turning to mineral resource exploitation.

3.2.1 The pastoral industry

The resident employed workforce is a little over 10 000 workers, of whom a quarter are employed in agriculture and forestry – primarily in pastoral production, though dry-land crops are grown in favoured parts of Maranoa. There is also a small irrigation area based on Warrego River at Cunnamulla, the wild honey of the bush is harvested by beekeepers and the forestry industry feeds several small sawmills. The principal export products are beef cattle, wool and sheep for meat. Producing all three requires careful management to ensure that the fluctuating carrying capacity of the country is utilised without overgrazing. Management techniques include rotation between paddocks, browsing, agistment and judicious timing of animal turn-off.

Four major challenges face the pastoral industry:

- maintaining detailed local knowledge to underpin property management. This knowledge is not easily acquired since it takes decades to experience the full range of seasonal conditions;

- developing pastoral products which meet specific market requirements and hence command premium prices;

- control of costs, particularly labour costs but also transport costs. It is here that there is potential for conflict with the mining industry; and

- control of pests, especially wild dogs and cats.

Two other meat animals – goats and kangaroos – offer potential for expanded production, but both are difficult to manage because neither species respects fences. So far goats have been herded and then processed as for other meat animals while kangaroos have been culled in the field – a process which has led to problems of quality management. The future of these products depends on improvements in animal management.

For the region as a whole, employment in the pastoral industry declined by 20 per cent from 1991 to 2011. The decline was most severe in Quilpie and Bulloo and had two major causes:

- the prolonged slump in wool prices during the 1990s and early 2000s generated a move out of wool which had a magnified effect on regional employment, since wool production is more labour intensive than beef cattle or meat sheep and even itinerant workers (such as shearers) tend to live locally; and

- an unusually long drought, particularly in the western part of the region.

Both the drought and the wool slump have ended, at least for the time being, and over the past few years employment in the pastoral industry has been recovering. It should also be remembered that other elements in regional employment are directly linked to the industry. Roma has the largest cattle sale yard in Australia and Charleville has one of the few remaining inland abattoirs.

Pastoral production is an extensive land use which is not seriously disturbed by mineral exploration nor seriously compromised by oil or gas wells or pipelines. The main potential for environmental conflict concerns ground water, with potential for competition for ground water flows and potential for the mineral resource industry to pollute ground water flows as well as creeks and waterholes.

3.2.2 Tourism

Compared to the agricultural and mineral resource sectors, tourism is a relatively minor export industry for the region. Accommodation and food services account for less than six per cent of the resident workforce and many of these are employed providing services for local people or for the mineral resource exploitation industry. However, the region has capitalised on its position astride the grey nomad route through inland Australia, an imaginative example being its investment in the Cosmos Centre at Charleville. The region does not attract many international visitors except for the backpackers who provide much of the hotel workforce in Roma. The mining boom has resulted in a shortage of tourist accommodation in Maranoa but not in the other shires.

3.2.3 Support industries

Apart from the export-oriented elements in its economic base, the region provides employment in necessary commercial support services in transport, construction and trade. These services account for around 40 per cent of total employment in the region.

3.2.4 Mineral resource industries

The region's second most important export industry, measured by employment, is the exploitation of mineral resources, which employs a little over 5 per cent of the resident workforce. Because of the importance of fly-in fly-out in this industry, its contribution to total jobs located in the region is somewhat greater, at 8 per cent, and because it pays relatively high wages its contribution to wage incomes would be somewhat greater again – but still way short of the pastoral industry.

This industry comprises three distinct segments.

- In Quilpie and Bulloo shires opals are mined by fossickers and other small businessmen. These enterprises have none of the characteristics of the big mining companies and can be treated as an adjunct to the tourism industry.

- The western parts of Quilpie and Bulloo shires lie within the Cooper Eromanga basin and have proved prospective for hydrocarbons. Local crude oil production supports the Eromanga oil refinery – a small but significant enterprise which supplies diesel, kerosene and specialist mining fuels to a large area of outback Australia. The Jackson oilfields in Bulloo shire have been producing since 1981, with crude oil piped out via Adelaide and Brisbane. More recently, the area has been developed for natural gas. Santos operates a processing facility at Ballera whence gas can be piped west to the Moomba hub, north to Mt Isa or east to the hub at Wallumbilla. Exploration is under

way which may extend gas production into Paroo and Murweh shires, but these at present have no mineral production.

- Energy resources available in Maranoa include coal, oil, natural gas and coal seam gas. Coal was mined at Injune until the dieselisation of the Queensland Railways in the early 1960s. The oil and natural gas fields have a history of a century, much of it a history of disappointment. The natural gas hub at Wallumbilla, east of Roma, was not sited to serve local production but lies at the point where the natural gas pipeline from Ballera bifurcates to serve Brisbane and Gladstone. However, over the past decade coal seam gas production has increased considerably in Maranoa and across the borders in Western Downs and Banana. These increases have generated investment in gas processing plants and an increase in the importance of Wallumbilla. Coal production has yet to resume in the shire but seems likely to do so as soon as the present limits on transport capacity to the coast can be overcome.

3.3 The resources boom in South West Queensland

The national resources boom has been based on iron ore, coal and gas. South West Queensland cannot produce iron ore and does not currently produce coal but has been well placed to participate in the gas boom. The pace of development in the gas industry in S W Queensland picked up in the early 2000s, well before the national resources boom was triggered in 2004 by the rise in world prices of iron ore and energy minerals. At the time there was no question of export markets and indeed there was a strong possibility that Queensland would be supplied with natural gas from PNG. Three factors served to increase interest in local gas production.

- In 2000 the Queensland government announced a Cleaner Air policy, which, with a long lead time, guaranteed a market for gas in electricity generation in Queensland.

- At around the same time investors were showing considerable interest in alumina production at Gladstone, again with potential to increase the demand for gas.

- Developments in the technology of coal seam gas production lowered costs.

In response to these signals, investment in coal seam gas began in earnest in Maranoa and adjacent LGAs. The contribution of the national resources boom has been to confirm demand, including introducing the prospect of export demand by construction of a LNG export terminal at Gladstone. Investment has continued, but the construction peak seems to be over. Employment in the mining sector in Maranoa continues to increase but not at the rapid rate experienced in the first five years of the present century.

The timing of gas industry expansion was similar in Bulloo and Paroo, though to a considerable extent it reflected the completion of a pipeline investments committed in the late 1980s. The Ballera gas hub was constructed and connected by pipeline to the Moomba hub in 1994, which enabled wells in S W Queensland to supply the Adelaide market. The pipeline to Wallumbilla was added in 1997, providing access to markets in Brisbane and Gladstone, and the pipeline to Mt Isa was completed in 1998. These connections inaugurated a program of gas field development which peaked in the early 2000's but continues to this day, with the locus of activity moving northward into Quilpie shire. As in Maranoa, the contribution of the natural resources boom has been indirect, by maintaining confidence that gas from the Cooper Eromanga basins will continue to find profitable markets.

3.3.1 The sequence of mineral resource development

The impact of mineral resource development on incomes and on other industries has to be understood in relation to the typical life of a gasfield. This has four phases.

- The exploration phase, carried out by a small, mobile workforce spread over a large area. This workforce is highly skilled and depends on scientific support. It is inevitably based in major centres and its members frequently camp out when in the field. The chief limit to the duration of the exploration phase is the time limits which state governments impose on exploration licences to prevent 'warehousing'. The exploration phase ends when sufficient reserves have been proved to justify the construction of processing and transport facilities.

- The construction phase, during which the processing plant and transport pipelines are built and when a relatively large workforce is brought in. Most of this labour requires general construction-industry skills. Since serious capital expenditure is involved, it is in the investor's interest that the construction phase should be as brief as possible, a few years at the most. The high wages paid in mineral resource sector construction are partly explained by the hurry.

- For most minerals the production phase requires less labour than the construction phase. However this is not necessarily true for onshore oilfields and gasfields where, as the field ages, exploration continues to pinpoint additional reserves and wells are drilled to exploit marginal reserves.

- The remediation phase, where the skills required revert to general construction-industry skills. Revegetation can be quite labour intensive, but the gas industry does not require the extensive surface earthworks typical of coal mining. The mining industry has a history of failure to provide for remediation but mine and petroleum tenements now require remediation and the major mining companies make reasonable provision, the costs being small relative to the damage to their reputations if remediation is not properly done. There is no particular hurry about this phase.

The course of the resources boom in South West Queensland can be charted by its labour market effects.

3.4 The resources boom and the labour market

Between 2001 and 2011 employment in the mineral resource exploitation sector in Maranoa increased by 380 workers and in Bulloo/Quilpie by 220 workers. These increases followed a period of construction. Though its skill requirements are not outstanding compared with manufacturing or rural industries or indeed with local government services, the mineral resource sector is now renowned for the payment of high wages, at least during booms. It was not always thus – workers in the Maranoa colliery of the 1950s were paid much the same wages as other rural workers. The reasons for the high wage rates currently paid include the following.

- The gas industry, like other major resource industries, is capital intensive. Disruptions from labour shortages which involve leaving equipment idle are accordingly very costly and employers are willing to pay to avoid plant stoppages. The quid pro quo is that workers must submit to the discipline of working the required shifts.

- Plant operators in the industry are frequently in charge of valuable equipment and mistakes in equipment operation can cost millions of dollars. High wages are in part compensation for being careful, the quid pro quo being that carelessness results in dismissal.

- High wages can also be seen as compensation for the personal disruptions which happen when people go to work in distant places in jobs which carry no guarantee of permanence.

Though not all firms in the industry follow this policy, the industry has a reputation for high labour turnover and also for low expenditure on training. It relies on two main sources of labour.

- Local labour may be recruited, either from those previously unemployed or underemployed or by recruiting from those previously employed by other local industries.

- Labour may be recruited from outside the region.

3.4.1 Local labour

The advantage in recruiting local people is that they are already accommodated, acclimatised and incorporated into the local community. However, not all local people take up the opportunity to work in mining.

- Not all are willing to submit to the industry's work discipline.

- Production sites are frequently located away from established homes and not all are willing to put up with the resulting travel requirements.

- Not all local workers meet the industry's skill requirements. Thus it is normal for mineral resource jobs to be on offer but not taken up by the local unemployed. In many remote areas governments and some mining companies provide training programs which attempt to upgrade the work and social skills of local unemployed people, particularly Aboriginal people, and these, coupled sometimes with job redesign, have been credited with increasing local participation in the industry.

A mining boom is therefore no guarantee for an end to local unemployment, though by all measures unemployment rates in South West Queensland have been below national average and significantly below the average in other rural areas which lack resource sector employment. (The exception is Paroo, which of all the five shires has been least affected by the resources boom.)

Despite the reluctance of many local workers to accept mining sector employment, the sector has succeeded in attracting locally resident workers away from employers who are not able to match resource industry pay rates. The pressure was reported as least in Paroo, which is the furthest of the five shires from developments in the gas industry – 500 km away is too far for comfortable drive-in drive-out, let alone commuting, and the supply of housing in Cunnamulla is sufficient to keep housing costs low for purchasers if not for tenants. Home owners are understandably reluctant to trade their present comforts for high housing costs in the boom areas.

At the other extreme, high rents in Roma are reported to have forced local residents into the industry just to get enough cash to pay the rent. The following were reported:

- pastoral workers and even owners were transferring to the resource industry, often part-year in the off-season for pastoral activity. The downside of this was that non-urgent maintenance tasks on the properties were being deferred, with eventual run-down in production capacity;
- contractors, transport businesses and councils other than Paroo were finding it hard to keep drivers and plant operators; and
- the Charleville abattoirs now rely on 457 visa workers.

Two dangers arise if labour cannot be found at costs similar to those prevailing in the regions without mineral resource developments.

- Government (particularly local government) assets will be run down, particularly roads
- Industries will be run down or even closed.

As regards roads and other local government services, the resource exploitation companies can be required to pay rates which not only cover a fair share of road costs but allow councils to pay competitive wages, even though councils are reluctant to lock in high wage rates which will continue to apply after the need for them is over. However, this opportunity is not available in shires without mineral production.

As regards the pastoral industry, the effect of the resources boom seems to have been marginal. Immediately essential production tasks are being carried out but there is a concern that a maintenance backlog is building up.

In industries characterised by large employers who offer permanent career employment, the established method of staffing unpopular posts was to make service in them a condition of career advancement. Recent management fashions have de-emphasised permanent employment but outback experience can still be a valuable item on a professional CV. Career promotion is still an important element in staffing schools, hospitals, banks, police stations and the like – broadly, in providing professional personnel. The resource exploitation industry does not, in general, directly compete for the services of remote-area professional personnel but can make it difficult to recruit such people by raising housing costs. Housing would seem to be the key to maintaining the attractiveness of non-resource jobs in the region, whether or not the jobs require skills attractive to the resource exploitation sector. This will be discussed below.

Tax incentives and HECS repayment incentives may also be valuable, and will be discussed in a separate paper.

3.4.2 Labour recruited outside the region

When it cannot find labour locally the mineral resource industry recruits elsewhere, not only within Australia but overseas. It uses permanent visas for skilled professionals and 457 visas for other workers. When employing labour from outside the region the resource industry has used two markedly different recruitment strategies.

- In Bulloo and Quilpie approaching 90 per cent of the industry workforce has been recruited from outside the region and continues to reside elsewhere – generally Adelaide, whence they fly in and fly out. To this we may add that significant numbers of support personnel in accommodation and transport also fly in and fly out.

- In Maranoa the number of resident mineral resource industry employees very nearly balances against the number of employment positions. However, this is believed to understate the importance of drive-in drive-out for the local economy, some of the drive-in drive-out activity being internal to the shire and some of it involving cross-border traffic to and from neighbouring shires.

The obvious reason for this difference is that Maranoa is less remote than Bulloo and Quilpie. The gas fields and processing facilities of the Cooper Eromanga basin are too far from either Thargomindah or Quilpie to support daily commuting from these established towns, though drive-in drive-out is a possibility. If these fields were to be served by resident labour, it would be necessary to build new townships – probably several of them, in view of the dispersion of the fields. The arguments in favour of fly-in fly-out include the following.

- Nobody wants to develop settlements which become ghost towns within a decade or two. Fly-in fly-out is appropriate when a workforce has to bivouac in a remote area for the limited duration of a project, especially a construction project. Accommodation needs can be met by temporary dongas without the need to provide more than basic facilities.

- Recent experience at Ravensthorpe (WA) highlights the perils of investing in mine-site townships.

- In some remote areas, though not as far as is known in the Bulloo and Quilpie shires, the Aboriginal Traditional Owners prefer that outside workforces should be employed on a fly-in fly-out basis.

- There are employers in the mineral resource industries who believe that fly-in fly-out workforces are easier to manage. They are less likely to unionise strongly and there is a potentially wide field of recruitment when workers are sacked for failures of discipline. Fly-in fly-out accords well with the industry's tolerance for high labour turnover.

- The Cooper/Eromanga gasfields are so spread out that townships to serve them would be very small and have limited facilities.

The arguments in against fly-in fly-out are as follows.

- The fly-in fly-out lifestyle corrodes social and family life – though probably no more so than established 'tour of duty' occupations such as defence and seafaring.

- Fly-in fly-out incurs high transport costs.

- The pastoral and tourist industries in the same area rely on resident employment, so why not the resource exploitation industry?

- Additional townships would help support the pastoral and tourist industries.

- The Cooper/Eromanga oil and gas fields have turned out to yield employment for two decades past and probably for two or three to come. Had townships been established when the fields were young they would have lasted long enough to be fully depreciated by the time their economic rationale disappears and they are abandoned and demolished.

These arguments are currently under review by a House of Representatives select committee and their report is awaited with interest.

Whatever the reasons for the long-term reliance on fly-in fly-out in the Cooper/Eromanga, the result has been that recruitment to the gas industry in Quilpie and Bulloo has placed very little pressure on local accommodation and has generated very little consumer expenditure in those shires – the fly-in fly-out workers do all their living and spending in their places of residence.

By contrast, many of the Maranoa gasfields are within daily commuting distance of Roma and other established towns and all are within drive-in drive-out distance. There has been strong pressure on all classes of accommodation in Maranoa which, in turn, has fed back into the difficulty of recruiting employees for other industries. This applies not only to the pastoral and tourism industries – elements of the economic base – but to the service industries, which have opportunities to expand to service consumption expenditure by the increasing number of resident resource sector employees. We will return to the accommodation shortage when discussing housing.

The hospitality industry and agricultural enterprises with seasonal labour demands have made considerable use of backpackers while construction and manufacturing have made use of 457 visa workers. The question is why industries resort to immigrant labour when there are still large numbers of under-employed and unemployed Australians in other parts of the country and even within the region. The reasons would appear to be as follows.

- Skill mismatches, many of which are as much social and behavioural as technical. More and better training and re-training are often recommended as answers, though careful approaches are required to meet the needs of people with deep-seated psychological problems often arising from a upbringing.

- The pressure on accommodation in the region coupled with the reluctance of Australian workers to leave their established houses in other regions and the metropolitan areas and the social networks that they have developed in those areas.

If immigrants are to be used to meet the local labour shortages created by the resource boom, there is something to be said for making work in the resource-booming areas a condition of their visas.

4. Transport effects

Gas and petroleum are most cheaply transported in bulk by pipeline. Once a pipeline is in place they make no demands on the general transport system. However, the process of exploration, well drilling, processing plant construction and pipeline construction all require use of the general transport system, particularly roads including many shire roads. The industry also uses road transport for product flows which are too small to justify pipeline construction.

Coal is a different matter. Export coal requires heavy haul transport as does domestic metallurgical coal and coal for electricity generation except where the power station is located beside the mine. Though export coal is not, as yet, mined in the region, mines located in Western Downs and Toowoomba LGAs have contracted a high proportion of the limited rail capacity between Toowoomba and Brisbane and are also prominent generators of road traffic. The agricultural and pastoral industries complain that this is depriving them of high-capacity access to the abattoirs and Port of Brisbane – an especially serious matter for shippers who, for various reasons, do not have the alternative of export shipping through Newcastle via Moree. It is expected in the region that the construction of a rail connection to Gladstone and/or the bypassing of the Toowoomba Range by tunnel will allow a revival of low-cost bulk rail services. However, this is by no means certain, if only because the two main rail service companies active in Queensland have both decided to concentrate on bulk mineral and container traffic – there is no equivalent of the smaller operators who carry agricultural products from Moree to Newcastle. Under current prices and technologies it is arguable that the pastoral and farming industries can prosper without rail transport, but there is a strong argument for maintaining rail capacity against that day when the reduction of greenhouse gas emissions becomes a world and national priority.

Returning to roads, the current situation is as follows.

- The Commonwealth remains the main source of roads funding for the South West, just as it is the main collector or road-related taxes. Its distributions are watched intently by local government and are more or less adequate – road condition in the region is now substantially better than they were a couple of decades ago. The five shires also appear to have been reasonably satisfied with the distributions for flood damage repair made during 2011.

- However, resource-boom effects on local costs are not taken into account in the Commonwealth's distributions.

- Again, some local roads bear mineral resource-related traffic which is not taken into account in the Commonwealth's distributions. However, the three shires directly affected – Bulloo, Quilpie and Maranoa – have moved to increase rates on the oil and gas industry to cover these costs.

- Shires have also negotiated with the gas companies to directly finance the construction of public roads required by the industry.

These arrangements do not cover road use during the exploration phase of mining development nor do they cover roads used in adjacent shires which have no mining tax base. However, apart from these deficiencies, the arrangements appear to be working.

5. Payments by resource extraction companies to governments

In addition to general taxes, such as corporation tax and payroll tax, there are two main classes of payment which governments may require from companies which extract non-renewable resources.

- Compensation for costs imposed on the community, notably road costs but also other items such as the cost of site rectification and pollutant management when these are left to governments rather than done by the business itself.

- Compensation for the loss of non-renewable resources. In the Australian states these resources are owned by the States and compensation is known as royalties. The resource exploitation industries like to refer to royalties as taxes, but this is not correct. Royalties are the price which the resource industries pay to gain ownership of the minerals they extract.

Because subsoil minerals in the region are the property of the state, neither local government nor the Commonwealth have the right to levy royalties. Local government has therefore concentrated on cost recovery.

5.1 Payments to local government

The principal source of local government revenue, other than grants, is the rate on land. As landowners and lessees the mineral resource industries are liable to pay rates.

Queensland legislation requires rating to be on unimproved values, which have considerable merit as means of spreading the rate burden across ratepayers. However, a strict unimproved value rate generates notoriously small revenue from town allotments in rural shires. The legislation allows differential rating and it has become customary to impose a higher rate in the dollar for urban allotments than for rural, the differential being determined by an estimate of the value of services provided to town ratepayers as compared to rural ratepayers. Rating on strict unimproved values also yields very low revenue from mineral resource exploitation properties – the unimproved values of these properties are low because the state-owned mineral resources lying under the property are not taken into account in valuing it. Local government has accordingly extended the established practice of differential rates for urban properties to impose differential rates on the mineral resource industry.

We may take the example of Bulloo council, which has defined four areas occupied by mineral extractive businesses each of which, 'by virtue of its operation impacts significantly on the economic, environmental and social welfare aspects of the local community'. Two of these areas, in addition, 'owing to the nature and size of its operation is a large consumer of Council services particularly roads'. Land in these four areas attracts a considerably higher rate in the dollar UCV than rural land. These rates were determined by negotiation between Council and the industry, and reflect estimates of the following.

- Road maintenance costs occasioned by resource industry traffic,

- Depreciation of relevant roads, which is fully funded,

- Waste management,

- A contribution towards other shire services,

- Compensation for the increase in wage costs due to the local presence of the mineral extraction industry and

- A contribution towards the sustainability reserve which is being accumulated with an eye to maintaining services (particularly roads) when direct contributions from the resource industry cease due to the exhaustion of non-renewable resources.

By means of differential rating, Bulloo Shire council raises nearly three-quarters of its total rate revenue from the oil and gas industry, but because grants and recoverable works are major sources of council funds this represents only 16 per cent of operating revenue. (Recoverable works are mainly road works at the behest of the State and Commonwealth governments but can include works negotiated with the resource companies to further their operations.) At less than $3 million the rate payment is also a minor expense in the books of the oil and gas companies.

Quilpie follows similar differential rating policies and in 2011-12 expects to raise nearly half its rate revenue from the oil and gas industry. After imposing differential rates on the industry it has abandoned a former road maintenance contribution levied on oil haulage. In rating the oil and gas industry Quilpie keeps an eye on the value of mineral production in the Shire as reported by the Department of Mines and Energy.

Maranoa has likewise defined six resource-related areas on which it imposes differential rates – four areas of extractive industry plus petroleum leases and land 'that is identified as having a gas refinery established on it'.

Though all shires host pipelines these are not rated. This policy concords with the general rate exemption for transport facilities. Mineral exploration licences are similarly rate exempt, presumably because they do not grant ownership or leasehold of land for which an unimproved value can be assessed. However, given their legal status as tenements they are potentially rateable, particularly if a fair value could be determined vis a vis other land titles.

The differential rating approach appears, so far, to have yielded revenue reasonably proportional to the increase in operational costs occasioned by resource extraction. Two approaches have been noted:

- the 'Bulloo' approach, based on a broad assessment of the costs occasioned by resource extraction, including contributions to a sustainability fund; and

- the 'Quilpie' approach, based on the value of production.

These two approaches frequently occur in public finance, the former reflecting the benefit principle and the latter the ability-to-pay principle. In the local government context the cost-based approach is on firm ground, but the negotiated nature of the settlements could prove a weakness in the case of councils which underestimate costs or which encounter resource extraction companies which are determined to strike a hard bargain, irrespective of the costs they impose. There may also be potential for dispute as the profitability of mineral extraction declines. If arguments develop, the parties are likely to appeal to costs, and councils should be prepared to give a careful and accurate account of the costs occasioned for them by resource exploitation.

The ability to pay approach is riskier for the council – it avoids the difficulty of trying to recover costs from unprofitable mineral extraction ventures but is likely to raise greater revenue from bonanzas. It is open to the objection that it is effectively a royalty and hence open only to the State (see below) but there are precedents in indigenous mining agreements and in the conditions under which mining leases are bought and sold. Given that state royalty rates on gas are 10 per cent of wellhead value, a local government addition of around 2 per cent would not be an excessive burden on the producers.

The two principles are not mutually exclusive, and could be appropriate to combine them, with a basic rate related to direct costs occasioned by resource exploitation and a value-related addition, which would come into play only when the basic rate yielded less than (say) 2 per cent of wellhead value. The additional revenue could then be credited to a sustainability reserve.

A second area where there may be scope for formalisation of current practice is the once-only capital contributions made by resource extraction companies as part of bringing resources into production. An analogy may be made with the contributions made by developers of urban housing estates. Contributions by resource companies may appropriately include capital roadworks, water supply, sewerage, water pollution control and drainage works required for the project to proceed.

An important aspect of urban developer contributions is compliance with town planning. This cannot so easily be imposed on mineral resource developments, since the resource determines the location of the development. However, there is scope for negotiation over the location of supporting developments – roads, pipelines, processing facilities, campsites and townships. It makes sense to locate these so that, as far as possible, they will be generally useful both during and after resource extraction. An example is that some of the remote area roads in Bulloo shire have been routed to be useful to grey nomads as well as to the gas industry. Maranoa is seeking to ensure that facilities are subsequently useful for rural residential areas.

A more contentious matter is the question of industry contributions to housing and urban development. It is accepted practice that where the mineral resource industry (or the pastoral industry for that matter) employs people remote areas it should provide accommodation. Such accommodation is either exempt from Fringe Benefits Tax (FBT) or is assessed for FBT at 50 per cent of 'market rates'. In towns where there are dwellings for private rental Fringe Benefits Tax becomes unavoidable. It is to be hoped that the House of Representatives inquiry into fly-in fly-out will investigate the incidence of Fringe Benefits Tax to ensure that it does not constitute a subtle incentive favouring fly-in fly-out.

A question of incentives also arises where Councils require that resource companies should pay developer charges towards the provision of housing in existing towns which are to be extended to accommodate resource industry workers. The companies may then calculate that it is cheaper for them to use drive-in drive-out or fly-in fly-out. Despite the possible adverse incentives, there is a case that developments other than short-term construction should include a contribution to local government urban infrastructure. There may also be scope for measures to assist in the provision of actual housing, for example a requirement that resource exploitation companies, as part of the price of their permission to exploit, should provide bank guarantees for mortgages raised on new owner-occupied or rental housing owned by third parties in urban areas expected to house personnel employed at the resource development, with the number of dwellings covered depending on the size of the resource development.

5.2 Payments to the State Government – Royalties

The administration of mineral wealth would be a relatively simple matter if all resources were known, complete with the cost of extraction. The fundamental problem of resource management would then be seen as one of resource allocation between the current and future generations. Having made a decision about this, the state could call tenders for the extraction of particular resources. It would receive, as sales revenue, the difference between the tender price and the resource sale price. However, neither the extent of resources nor the cost of their extraction are known except very hazily. Weighing up the risks and incentives, the state may be expected to maximise the return from its resources if it exacts a price which:

- goes up as the final sale price of the mineral goes up; but
- goes down as extraction costs increase.

A price so determined becomes a form of profit sharing and can easily be mistaken for a tax – an emotive mis-identification which the mining industry played for all it was worth in opposing recent Commonwealth mining tax proposals. In fairness to the industry, the Commonwealth proposal was indeed a tax, since the Commonwealth has no right to levy royalties – if a State had required a similar payment, it would have been a royalty. The Commonwealth saw an opportunity to raise revenue because the states had failed to raise their royalties in line with the resources boom. The upshot is that the right of the states to levy royalties has been vindicated and they have the opportunity to raise their mineral prices to claim a larger share of the current boom.

The history of royalty payments in Australia begins with the nineteenth century gold rushes, during which the colonial governments were reluctant to levy royalties because the diggers were numerous, vociferous and had many ways to evade payment. To this day fossicking minerals are largely exempt from royalties, in Queensland and elsewhere. However, most of the mineral extraction industry is now large-scale and capital-intensive and there are no technical problems in the calculation of royalties provided the formula is clear. In Queensland royalties are mostly charged ad valorum, varying by mineral, as follows.

- Gemstones are free of royalty up to $100 000 sale value, after which the state claims 2.5 per cent of their sale price.
- More importantly, petroleum (including natural gas and coal seam gas) is sold for 10 per cent of its wellhead value.
- Coal is sold for 7 per cent of its value up to $100 a tonne and 10 per cent thereafter, with the calculation performed separately for domestic and export sales.

Since this revenue is derived from the sale of non-renewable assets, there are strong arguments for hypothecation of the revenue to investment in replacement assets. Western Australia has set a precedent with its Royalties for Regions fund, which feeds the Western Australian Regional Development Trust. Queensland faces many of the same problems of development of remote regions as Western Australia, so the Western precedent is especially relevant and should be investigated.

One of the hopes of the Western Australian government is that it will be able to develop industries to process its resources before they are exported. People in S W Queensland also wonder whether manufacturing industries can be built on the basis of its gas and coal supplies. The present oil refinery at Eromanga provides a small-scale precedent, but it is sheltered by transport costs from world competition in a way which a larger-scale industry would not be. Even so, the region should be alert to opportunities, which could arise in conjunction with that other energy resource which the region has in abundance – sunlight.

6. Housing

At the 2006 Census, approximately one-third of the occupied dwellings in the region were rented with the remaining two-thirds occupied by owners or purchasers. The individual shires varied from the overall pattern as follows.

- In Bulloo the proportion renting was relatively high, due largely to state-owned houses, many of which were presumably occupied by personnel providing state services. In addition, the council was an important landlord. Few houses were being purchased but a substantial proportion was wholly-owned. Very few new dwellings were being built.

- The pattern in Paroo and Quilpie was broadly similar, though with a bit less emphasis on state ownership and a few more home buyers. New dwellings were under construction despite the gradual fall in population in Paroo.

- In Maranoa and Murweh about a quarter of dwellings were being purchased, balanced by a smaller proportion of outright ownership. New dwellings were under construction but not at a particularly rapid rate and in Maranoa a shortage of accommodation was developing.

All shires reported that they were trying to promote low accommodation costs as a way of retaining workers for industries which could not afford to pay resource industry wage rates. A primary element in the strategy was low land costs – well below metropolitan levels. However, both lot servicing costs and dwelling construction costs were higher than in the metropolitan areas for three reasons:

- transport costs for materials;

- the need to accommodate out-of-town skilled labour; and

- lack of economies of scale in construction.

In Thargomindah the impact on costs was estimated at between 25 and 30 per cent over costs in Toowoomba, raising the cost of a $300,000 dwelling to $380,000. The impact in Charleville would be less because of the availability of local tradespeople, but in Roma would reflect direct competition from resource-related construction for the services of local tradespeople.

In Australia the preferred low-cost tenure is home ownership. The low costs derive in part from tax favours, particularly the lack of taxation of capital gains made on owner-occupied dwellings. However, the benefits of owner-occupancy can be offset by the costs of buying and selling houses. For people who are obliged to change residence in the course of their careers home ownership is not necessarily the lowest-cost housing option, particularly when they live in regions where capital gains are far from guaranteed. In SW Queensland towns home ownership is likely to be the lowest-cost housing option for people who stay put for at least a decade, perhaps less, but there is likely to be a healthy demand for rental accommodation not only from people who cannot surmount the financial barriers to home ownership but from people who expect to be stationed in the town for less than a decade.

Two particular barriers to entry into home ownership were reported in the towns of SW Queensland:

- bank requirements for relatively high down-payments, reported to be due to an assessment that employment continuity is risky in towns with a narrow economic base; and

- fear on the part of potential buyers that they might be landed with capital losses, again reflecting an estimate that the economic base is narrow and the risk of downturns is serious.

These two barriers also affected investment by private landlords – hence the heavy reliance on employer-provided housing, including housing provided by the shires. Several of the shires have become active traders on the housing market in the attempt to keep house prices down in their towns.

The two barriers have a common cause: the risks which derive from a narrow economic base. However, pool together all the remote towns of Australia and one no longer has a narrow economic base. This is the classic basis for insurance. It is surprising that the finance sector, which so prides itself on its capacity to innovate, has not offered insurance against the risk of falling dwelling values in defined locations. Essentially the risk concerned is that of falling unimproved values, though it could also be based on average improved values for the town concerned. There is a case for Commonwealth government action to ensure that the finance sector provides such insurance, at least in remote areas (but possibly generally) at a reasonable price. If this risk can be specified and insured against, it should become easier to gain funds for investment in housing in remote areas. (NB: a similar proposal is developed in R Shiller, *The New Financial Order,* Melbourne, Scribe, 2004, p118, under the title home equity insurance.)

Another suggestion is to invest in the upgrading of removable homes. Historically a high proportion of the dwellings in SW Queensland have been wooden, designed so that, if they are no longer needed on a particular site, they can be uplifted from their stumps and re-erected elsewhere. In view of the uncertain prospects for employment based on mineral resources, there is a case for a continuation of this tradition, with opportunities using prefabrication and modern materials. Such techniques are already in general use for temporary camp dongas and the challenge is to move them up-market. There is also a challenge to local government to ensure provision of adequate sites for such homes, not in caravan parks but urban lots so that the resident families can integrate into the town population without stigma. Such land developments should include plans for re-use of the sites should this become necessary.

As already noted above, the only industry in the region with the capacity to pay developer charges to councils to assist with new housing construction is the resource exploitation industry, where such charges may be required as part of the price of the resource. Many factors enter into the decision as to whether a given mining licensee should be required to contribute to housing development, particularly the permanence of the development and its location vis a vis employee source towns. However, councils should not be shy of arguing for such contributions.

7. Gender balance in employment

It is now accepted Australian practice that both men and women wish to be in paid employment while they are of workforce age. If families are to be attracted to live in country towns, therefore, suitable paid work must be available for both husbands and wives. Second-earner work does not necessarily have to be full-time – many second-earners prefer part-time work – but it does have to be available, along with complementary services, particularly child care.

The labour market in the towns of S W Queensland has proved reasonably accommodating in supplying work for married couples. The service industries are adept at creating part-time positions, the gender stereotyping of jobs has broken down and the TAFE network assists in providing necessary skills. However, there is still a role for Councils and other public institutions, in their role as employers, to watch the local labour market and endeavour in their employment policies to ensure that couples can find satisfactory work for both partners.

8. Tax concessions and government services in remote areas

In this paper we have reviewed the consequences of the resources boom for South West Queensland – a region which has participated in the boom, though not fully: mineral resource exploitation has not become its dominant economic activity. On the assumption that booms never last forever, we have considered ways in which the pastoral, tourism and other industries can be sustained, not only for the sake of their current economic contribution but even more in anticipation of their continued contribution once the resources boom has subsided.

The discussion has not been exhaustive and in particular two groups of policies have not been mentioned.

- The Commonwealth offers tax incentives to work in remote areas. These can be helpful in recruitment and payment of personnel.

- Both the Commonwealth and State governments pursue policies on service provision which can be more or less helpful in recruiting personnel to work in S W Queensland.

These topics (which are related) will be discussed in a companion paper.

9. Conclusion

On balance, South West Queensland is benefiting from the mineral resources boom – some shires more than others. However, to ensure that benefits continue, it is necessary to plan for what will happen after the boom has run its course. There are two main concerns.

- Infrastructure should not be allowed to deteriorate as a result of boom usage. Similarly, infrastructure put in place as a result of the boom (including transport, water management, urban development and all else) should be designed for maximum value after as well as during the boom.

- The boom should not be allowed to detract from the productive capacity of the pastoral, tourism and other non-mineral resource industries in which the region has expertise. Even during the boom these industries continue to dominate the region's economic and employment base, and the region will once again turn to them once the resource boom subsides.

Measures canvassed in this paper have included the following.

- Ensuring that the mineral resources industry makes appropriate contributions to local infrastructure through a rural equivalent of the urban developer charge system. (The local governments of the region are already doing this but there may be room for systematisation.)

- Ensuring that the mineral resources industry makes appropriate direct contributions to local government. (The local governments of the region are already doing this through differential rating but there may be room for underpinning what are essentially now negotiated contributions.)

- Increasing state royalties to fund a Regional Development Trust, as pioneered in WA.

- Financial regulation to require appropriate financial intermediaries to insure housing values in the towns of the region.

- Investment to improve the quality of transportable homes.