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Boom Economic Conditions and Vulnerable Housing Markets

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Workshop 02 - Housing Economics, Governance and Regulation Policies

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Abstract

The Australian economy has experienced phenomenal growth on the back of unprecedented international demand for resources. The impact has had far-reaching impacts resulting in critical housing issues that have social and economic implications for local and regional communities and the broader Australian economy.

While this paper highlights the challenges inherent in managing housing issues in Australia during boom periods, there are likely to be lessons from the Australian experience which can be applied in international settings. These challenges include: the diversity in scale and nature of booming industries and its impacts; the cyclical and often unpredictable nature of booms, (in particular the resources industry); changing technology and labour market practices; and differences in policy and institutional arrangements across jurisdictions.

This paper draws on a comprehensive study of housing market failure as a result of the recent resource mining boom. We conclude that unless careful strategic planning and an understanding of the economic and social role of housing are established, the market dynamics create a situation that is vulnerable to market and social failures. Rather than allowing the market to frame the social and economic outcomes, we claim that there is a strong case on social and economic grounds for governments to play a more active role. With government involvement, there is more certainty that housing markets will achieve some equilibrium. A full range of responses tailored to local contexts need to be developed including: direct provision of public housing; facilitating and investing in not for profit affordable housing; overcoming barriers to private sector development and financing of affordable rental and homeownership options; negotiating with mining companies to address housing impacts of developments; and leadership in growth management and planning. By this means, we hope the mistakes discovered in the course of our research will not be repeated in the next, inevitable boom.

Keywords:

Housing affordability, resources boom, housing market dynamics, governance

Introduction

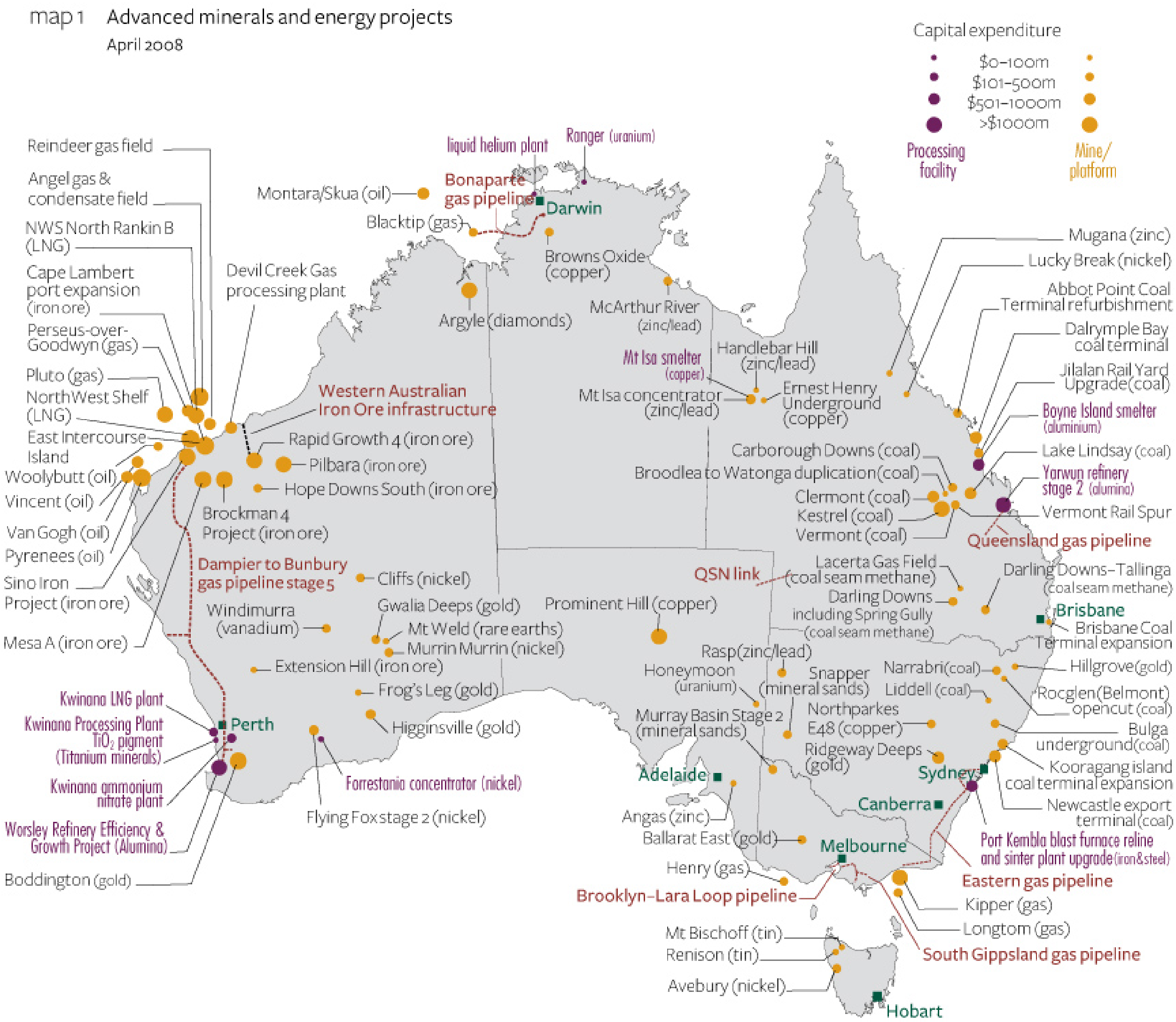
The Australian mining and energy sector has been important to the Australian economy since colonial times and has been particularly important for the development of the Western Australian economy since the 1960s. By the end of the twentieth century, Australia was one of the most productive and diversified mineral regions in the world and for the States of Western Australia and Queensland, mining has consolidated its position as a major source of export income. The Australian mining and energy sector has experienced sustained growth since around 2001. The prolonged rise in commodity prices and the inevitable downturn that follows it are colloquially termed as a super-cycle. At May 2007, there were approximately 104,700 full time employees employed in the mining industry sector, representing a 30 per cent increase since May 2003 (an average growth rate of just under 7 per cent per annum). In 2008 the Minerals Council of Australia (2008) stated that the resource sector would require nine per cent per annum employment growth to meet supply expectations. The same report points to ongoing high investment, averaging around $25 billion (Au) per annum in greenfield and brownfield expansions in recent years. At the time the report was issued, the value of projects in mining and energy projects committed or under construction was $57.5 billion (Au), about 70 per cent of which was in Western Australia.

The sector has a long history of boom and bust cycles, reflecting its exposure to international markets and fluctuations in demand and supply. The traditional boom/bust cycle of the minerals and energy sector influences investor confidence. Various analysts argued that boom conditions would last longer than in previous periods because of the strong underlying demand for key commodities from the emerging economies of China and India. For example, urbanisation and industrialisation require large quantities of steel for construction which, in turn, generates high levels of demand for coking coal (a key component for steel production) and for other commodities such as copper and aluminium. These emerging economies, in turn, are driving up demand for energy (coal, gas and oil). While the current financial crisis may dampen expected global demand for some Australian minerals, there is still confidence that the longer term investment outlook remains positive. Even if investment slows, there will be quite a long lag time before this is manifested in reduced activity in the sector because of the large number of projects already in the pipeline (Western Australian Chamber of Commerce and Industry 2008).

In Australia, the majority of mining activities are significant distances from large population centres and tend to be scattered in remote and very remote areas where the dispersement of people can be as low as 0.5 per kilometre in some areas (see Figure 1). Queensland has regionalised settlement patterns with significant regional population centres along the seaboard and key inland centres such as Mt Isa. Western

Australia’s population is far more centralised within the capital, Perth, with small non-urban centres more dispersed.

Figure 1: Mineral and Energy Projects in Australia 2008



Source: Minerals Council of Australia 2008

Inevitably, small towns and localities where resource activities are usually centred experience recurring housing shortages and crises during boom resource market conditions. The housing situation has had a negative impact upon these communities in a variety of ways and, in the case of some remote towns, constitutes a community crisis.

This paper draws on a comprehensive study of housing market failure as a result of the recent resource mining boom focusing in particular on communities in remote regions of two Australian States, Western Australia and Queensland, where mining activity has been particularly frenetic. It focuses on two small communities, Karratha in Western Australia and Moranbah in Queensland, which are important mining hubs and which have attracted considerable media interest due to lack of adequate housing and the subsequent economic and social implications of the shortage. It demonstrates the important linkages between housing and the resources industry and shows the ripple effect on the broader community when the provision of adequate and affordable housing is overlooked. The next section provides a summary of Australian housing markets, particularly over the last decade. This is followed by an examination of the impact the mining and resources industries have had on housing and housing markets, particularly in remote regions where much of the mining activity occurs. The two case studies are then presented followed by a discussion of the long term impact boom conditions have had on these communities including the implications of poor housing and planning more generally. The paper concludes by making suggestions for more sustainable governance practices and improved planning frameworks to better integrate industry and government commitments to housing and infrastructure more generally.

Australian Housing Markets

The majority of Australians aspire to homeownership and it has been the cornerstone of wealth creation and the achievement of self-funded retirement for most Australians for over half a century (Baxter and McDonald 2004; Beer, Kearins et al. 2007). Home ownership contributes to social stability, community development, and economic welfare (Badcock and Beer 2000; Walker, Ballard et al. 2007). Over the last decade housing supply and affordability have become critical throughout the nation and as noted by the Senate Select Committee on Affordable Housing in Australia (2008: 1) the median house price in the capital cities is now equivalent to over seven years of average earnings; up from three in the 1950s through to the early 1980s. Only a third of transacted dwellings would have been accessible to median income households in 2006-07, compared to a long-run average of almost a half. Not surprisingly, the number of people suffering housing stress has also increased. Almost two thirds of households in the lowest 40 per cent of the income distribution with a mortgage or renting in the private sector were spending over 30 per cent of their income on housing, (the established benchmark for housing stress) (Yates 2007).

The problem of affordability has been a function of both strong demand and limited supply. On the demand side, higher average incomes, a decrease in household size, population growth and a sustained period of low interest rates all contributed to high demand for housing (Australian Bureau of Statistics 2007a). Simultaneously, the supply side faltered with shortfalls in land supply in high demand locations, increased development and planning costs and extended delays in reform processes and the provision of infrastructure (Gurran, Milligan et al. 2008). The tightening of the construction labour market due to demand from the rapidly expanding resources sector caused capacity constraints within the building industry in many areas and worked against meeting housing demand and infrastructure project timelines. Many low and middle income households experienced housing related stress both during the boom conditions and continue to do so as the boom has given away to recession.

These metropolitan trends have flowed onto the non-metropolitan areas and are exaggerated in resource booms areas where demand has dramatically outstripped supply.

The dominant approach of Australian governments, especially over the past three decades, has been to rely on market forces to deliver housing outcomes with minimal direct government intervention (Hillier, Fisher et al. 2002). Direct intervention has been in the form of the non-market provision of social housing and financial assistance to low income renters and first home purchasers, for example the First Home Owners Grant scheme. Governments also exert considerable indirect influence on housing outcomes through policy interventions in areas such as taxation, land use planning, building regulations and tenancy law. Housing considerations have been largely absent or peripheral to broad regional development policies and processes (Hillier, Fisher et al. 2002). The lack of housing focus at a public policy level has a direct impact on the provision of housing throughout Australia. This has implications for economic competitiveness in many remote regions of Australia with under-developed housing markets (Beer, Kearins et al. 2007).

Public housing stock has undergone a significant decline in Australia over the last fifteen years. In 1994 public housing represented 6.2 per cent of the national stock, reducing to 4.9 per cent in 2003. The Commonwealth State Housing Agreement (CSHA) has been a significant primary national policy instrument for direct government involvement in housing in Australia since 1945 and has provided the institutional, financial and policy frameworks for social and other housing assistance programs. The funding for public housing through the CSHA has reduced by twenty per cent over the last decade, whilst funding for Commonwealth Rent Assistance (CRA) has increased by sixty six per cent. These figures are indicative of national and State housing policies which have been historically committed to promoting widespread homeownership, instead of attempting to promote a more diverse housing system. Anthony and Milsom's work (2006) showed that there is considerable housing stress in the non-metropolitan regions of Western Australia and public housing supply has not kept abreast of regional population growth and pressure induced by increased economic boom conditions. However, as noted by Rowley (2008) housing affordability descriptions, such as measures of housing stress and price:income ratios, only evaluate those that can or cannot afford to purchase or rent market housing. They ignore those that actually want to form a new household but are unable to do so, those that would like to form a household within their existing community but are forced to move elsewhere or those that would like to move into a specific community for family or work reasons but are unable to afford to do so. There is strong evidence to suggest there are people who would like to live in resource boom towns such as those examined in this paper but are not able due to a dearth of accessible and affordable houses. As identified by Anthony and Milsom (2006) public housing demand has been inadequate for more than a decade and more recently CRA has not come close to meeting rental costs or alleviating housing stress in some regional areas. The dramatic house prices and rent increases in regional Western Australia have only exacerbated the situation.

The housing situation is particularly difficult for Indigenous people who are dependent on inadequate social housing which is, usually inappropriate and often not easily accessible in the resource activity centres. Indigenous housing conditions remain poor, extreme overcrowding is rife and access to basic infrastructure is severely lacking (Australian Institute of Health and Welfare 2005; Australian Bureau of Statistics 2007b).

The Australian Resources Industry and Housing

Mining companies have had considerable involvement in housing, particularly in the 1970s and 80s when entire towns were built and maintained by companies. At that time, entire towns and the associated infrastructure were built and owned by mining companies. These towns were often referred to as 'closed' because their governance was wholly determined by the company and accommodation and services were strictly for company employees only. When the market collapsed or the ore body ran out, the towns were abandoned and usually demolished. For political, social and economic reasons, company towns have either disappeared or 'normalised', meaning they are no longer restricted in who lives there or accesses services and the local government has taken over its governance. Nonetheless, there still lingers an expectation that resource companies will provide the necessary infrastructure and services with minimal investment by government.

From time to time, there has been vigorous argument within academic and public policy circles about who is responsible for the provision of housing and other infrastructure, particularly in small communities whose *raison d'etre* is principally to service the resources industries. Arguing that they are paying substantial royalties to government, companies publicly resist calls to provide infrastructure and services that they see as being the responsibility of government or other sectors of society. Nonetheless, by virtue of the scale of their presence in the area, mining companies continue to have a significant impact on housing and land market dynamics. The way companies manage the sequencing of resource developments and, conversely, the timing of mine closures and restructuring has a significant impact on local housing markets and the availability of housing for non-mining residents of the community.

With the upsurge in prices in some mining communities and the growth of a private housing market in these communities, the focus of company support has shifted towards schemes that provide access to subsidised loans and one-off home purchase grants. These schemes have proved attractive to employees in a rising market, because of the prospect of making a significant capital gain. For resident employees who are unable or unwilling to purchase a home, company rent assistance is normally made available. In some cases, mining companies perceive a direct economic advantage for the company as well as the community in housing development. An example is in New South Wales where Coal and Allied has announced plans to develop a 7,000 home residential estate on surplus company-owned land. This development is not limited to company employees, and will meet housing market demand already existent in the region. In other cases, mining companies play an indirect role individually or collectively in housing supply by partnering with developers to provide worker accommodation by committing to lease back accommodation and therefore ensuring a guaranteed return for investors.

Increasingly, resource companies are choosing to operate Fly in/Fly out (FIFO) and Drive in / Drive out (DIDO) work arrangements whereby workers travel to work, often by aeroplane and "stay a pre-determined number of days ('roster') then return to a home location for a set break time" (Price 2008: 8). The employer provides food and accommodation close to the mine site and the work rosters are usually compressed work weeks. FIFO is also increasingly the preferred means of managing the construction phase of projects, because of the temporary nature of the workforce and the difficulty of sourcing skilled construction workers locally. The industry's increasing reliance on FIFO is controversial. A major criticism is that FIFO results in regions missing out on the economic benefits of mining: the so-called 'fly-over' effect (Maxwell 2001; Storey 2001) and the negative impact of FIFO on relationships and families is well documented (Watts 2004; Gallegos 2005). However, a FIFO workforce relieves both government and the private sector from the provision of a raft of housing and infrastructure responsibilities.

Vulnerable Local Housing Markets in Resource Booms Towns

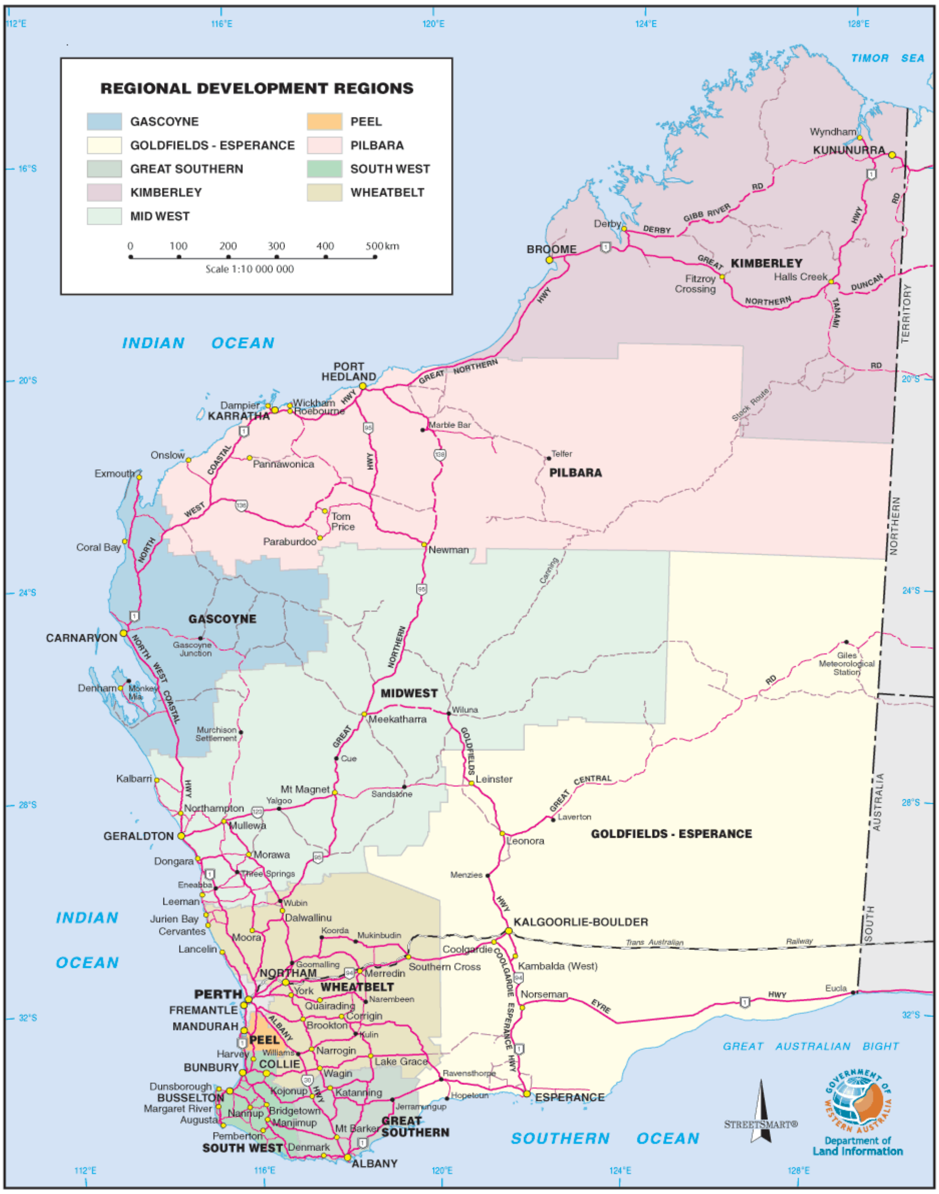
As noted earlier, the size and footprint of the large mining companies, particularly during boom cycles, can have a significant and damaging effect on the local community. The housing stock fluctuates depending upon the resource cycle and commodity prices. The large scale and sustained boom conditions experienced over the last six years has meant that resource company-owned housing has been withdrawn from the private sector to meet resource company housing needs. It is then left to the government to release new land in an attempt to increase the supply of private sector housing. However, there are time lags associated with planning, native title and mining clearances and environmental approvals required for land release and the installation of the necessary infrastructure such as roads, power, water and sewage services necessary to bring virgin land to developable status. (Native title is the recognition by Australian law that some Indigenous people have rights and interests to their land that come from their traditional laws and customs. The complicated determination of access to land over which there is a native title claim (unallocated or vacant Crown land and some areas already held by, or for, Indigenous Australians) commonly takes years). It can often take seven years for Crown land to be released to the market from initial identification.

The large mining companies have sufficient capital to quickly secure a monopoly over hotel accommodation and other private sector housing making it very difficult for local businesses to attract and retain staff. Invariably the region quickly becomes a mono-economy, dominated by mining and associated activities as other less affluent industries such as retail, service, entertainment and childcare have all been marginalised. In the five years leading up to mid 2008, the boom in iron-ore prices and the resulting increase in production placed service delivery in education, health, policing, childcare, retail and small business under considerable pressure. Housing for key workers such as nurses, justice workers, teachers, police, local government and regional development commission staff was no longer readily available for lease from the private sector and the Government Regional Officer's Housing (GROH) did not have an adequate stock of houses to meet demand. GROH reported in mid-2007 that it required approximately 50 houses to meet immediate government employee needs. Consequently government staff have often been housed in the limited motel accommodation which has then restricted accommodation opportunities for tourists and other potential visitors. It was reported that inappropriate housing contributed to high turnover for key government, medical and education staff which was exacerbated by resource companies offering high salaries and generous accommodation and other allowances. The difference in remuneration between the resource sector and other non-mining businesses subsequently caused intense competition for accommodation and employees.

Case Study 1: Karratha in the Pilbara Region of Western Australia
The above scenario has been played out in numerous locations throughout Australia, but one of the most severely impacted was the Shire of Roebourne in the Pilbara region of Western Australia see Figure 2. Karratha is the largest town in the Shire with about 70 per cent of the Shire's population (11,725 people), and 70 per cent of its residential dwellings. The town was established in 1968 by a joint agreement between the Western Australian government and iron-ore miner, Hamersley Iron. It was a product of the 1960s mining boom and is surrounded by a number of small satellite towns, all of which are within 50 kilometres and serve as resource housing towns.

The impact of large scale mining activities has been wide-ranging. More than a third of the population is employed in the well-paid resources sector but due housing demand exceeding supply, the cost of living is prohibitive. The housing market in Karratha is one of the most expensive in the nation. At the height of the boom, demand for housing and a slow supply response forced prices to rise by around 200 per cent in five years. The median house price in Karratha reached $700,000 (Au), around $250,000 (Au) above the Perth Metropolitan area, and a typical new four bedroom two bathroom house could be expected to sell for well over $1million (Au). A high proportion of the houses in Karratha a rented (62 per cent) which is almost twice the State average. As shown in Figure 3, houses prices costs have escalated over the last five years. The rental market came under extreme pressure due to a growing population and rising costs of owner occupation. Rents for four bedroom houses were in excess of $2,000 (Au) per week and rents per bedroom in shared houses were over $500 (Au) per week. The limited supply and cost of housing resulted in major problems for the labour market. A lack of staff for average and low paid jobs, for example: nurses, teachers, and retail workers, was as a direct result of the cost of housing. Evidence that there was a well established housing crisis in Karratha was consistently reported from 2003 (Pilbara Development Commission 2004; 2006; 2007).

Figure 2: The Pilbara Region in Western Australia



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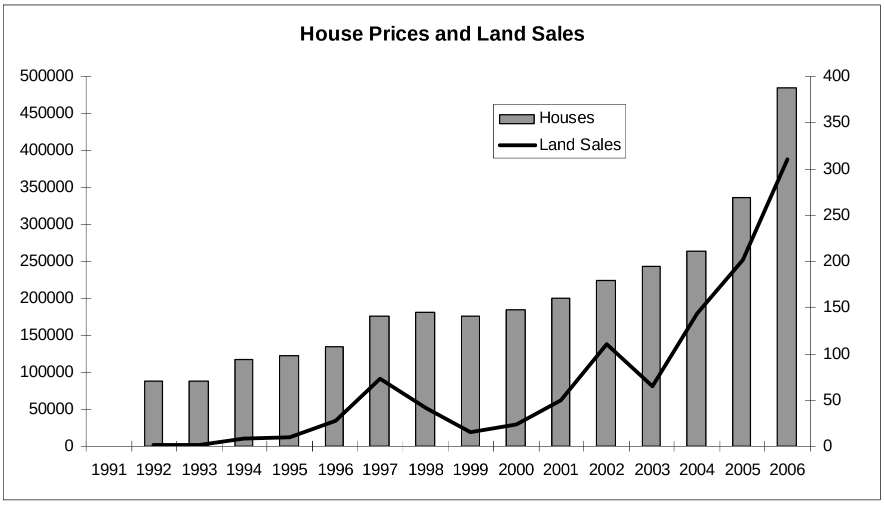
Research undertaken for the Australian Housing and Urban Research Institute (Haslam McKenzie, Brereton et al. 2009 (forthcoming)) found evidence of people living in caravans, backyard sheds, tents, garages and even two couples living in their cars for extended periods of time. The housing crisis has led to some people flouting regulations. Overcrowding, sub-letting, 'hot bedding' (different people occupying the same bed, not necessarily together, over a 24 hour period) and illegal occupation place a section of the population in a class of people who do not want to be 'seen' or counted by any authority, including the Australian Bureau of Statistics. The pressure for housing in resource boom towns has had a significant impact on the availability of housing for Aboriginal people and those residents or would-be residents for whom housing is either not provided or not subsidised by the resource companies or government, most particularly small business and retirees.

Figure 3: Houses Prices and Land Sales 1992-2006



Source: Haslam McKenzie et al. 2009 (forthcoming)

As a result of the housing crisis services normally expected in a functioning community are increasingly unavailable. For example, residents report how they have had to drive 1,000 kilometres south to another large regional centre to have their car serviced by an approved garage or risk losing the warranty. The paint shop, IT service, dive shop, various tourist operators, gift shop and mechanic shop have all closed citing the inability to attract and retain staff and/or excessively expensive commercial rents. When businesses close, there is less retail diversity forcing people to leave the town to shop. Fewer paid employees in town means less people to patronise the businesses that are still operational and so the cycle of decline continues. The Pilbara region is too expensive for most retirees and hence, as reflected in the Census, Karratha has very few people aged 65 years + (6 per cent of the population in the 2006 Census). This removes a large proportion of the volunteering sector and prevents the community functioning in a traditional manner. Attraction and retention strategies continually fall to community and industry groups but where a community or town is already under extreme pressure, such as is the case in the Pilbara, it is unlikely that a co-ordinated strategy will be developed without significant government leadership, commitment and involvement.

Compared to the rest of the State and national statistics, the Shire of Roebourne has a high proportion of aboriginal residents (11 per cent), compared with 3 per cent of the

Western Australian population and 2 per cent of the Australian population. However, despite the labour shortages during the sustained boom period, aboriginal people were largely excluded from the workforce and job opportunities due to poor accessibility to work and no public transport. Ninety per cent of the aboriginal residents of the Shire of Roebourne live 50 kilometres from Karratha. Public housing is over subscribed and as result, many homes occupied by aboriginal people are overcrowded and some severely so. Overcrowding often involves numbers in excess of 20 people and the services are poor. Some homes have only one tap with potable water, poor security and limited access to home maintenance services. Domestic violence, drug abuse and illegal activities are common. Despite all these difficulties, the cost of housing in this area has risen along with the rest of the housing in the region, further isolating aboriginal people from the broader community.

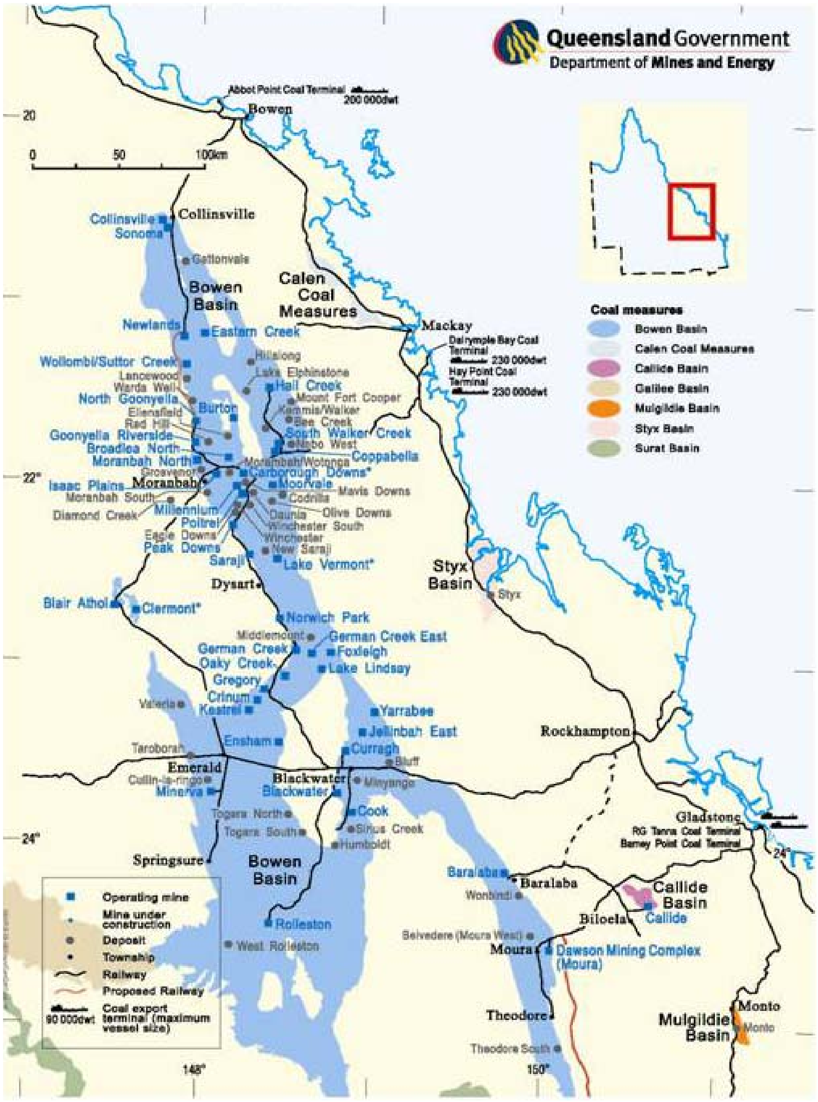
The State government has multiple and prominent roles in the Pilbara region and Karratha in particular. Much of the surrounding land is owned by the Crown and hence, when land is required for industrial or residential purposes the State government is heavily involved. The process of rezoning the land is, as noted earlier, time consuming and onerous, requiring the involvement and co-ordination of multiple government departments including Native Title, Environment and Conservation, Planning and Infrastructure, Planning Commission, Landgate, Heritage, Water Corporation and the local government authority. There has been considerable concern that the State government, through its land development agency, Landcorp, has not done enough to supply sufficient or appropriate land in response to high demand. In the 1990s several assessments of planning needs for the Pilbara were undertaken (Department of Planning and Urban Development 1992; Ministry for Planning 1997). The reports identified the inability of Karratha's infrastructure to cope in the short to medium term with any increase in industry activity or population base. Unfortunately, there was minimal planning coordination across government jurisdictions and few of the recommendations were enacted by any level of government prior to the onset of the most recent and prolonged resources boom.

The shortage of affordable housing presents a particular problem for service providers as few organisations can match the wage levels paid by the mining companies and prospective applicants for jobs demand housing or else they cannot take the jobs advertised. Services which are funded through various government departmental grants or through not-for-profit organisations are unable to provide housing or match the generous allowances given by mining companies for housing rents, so they remain understaffed; exacerbating the poor services and support structures throughout the region.

Case Study 2: Moranbah in the Bowen Basin Region of Queensland

The Bowen Basin has massive concentrated deposits of seaborne coal and is situated within driving distance of seaboard regional centres of Mackay and Rockhampton and the central highlands regional centre of Emerald (see Figure 4). The Bowen Basin holds the largest coal reserves in Australia and one of the biggest in the world. During the boom nearly 30 operating mines were extracting over 100 million tonnes annually (Department of Mines and Energy 2007a; Department of Mines and Energy 2007b) In line with the ‘resources super-cycle’ the Bowen Basin has experienced cyclical fluctuations in population and economic conditions associated with changes in mining activity. Many workers live in the seaboard centres and travel to work in the mines, (a drive-in/drive-out workforce), and many reside in work camps and in nearby towns for several days at a time while on block rosters.

Figure 4: the Bowen Basin Region of Queensland



Source:
http://www.dme.qld.gov.au/zone_files/coal_files_pdf/cen_qld_coal_map_08.pdf

The accumulated effects of rapid expansion in coal mining since 2001 include population growth and housing pressures. Housing conditions associated with the mining boom in the Bowen Basin identified in government and community reports include:

- Rent increases: median rent for a three bedroom housing in the region increased by 142 per cent ($123 to $198 Au) between 2001 and 2006;
- House price increases: the median cost of purchasing a three bedroom house has risen from $51,318 Au in 2001 to $196,130 Au in 2006;
- Limited housing options: low vacancy rates for rental accommodation and limited social housing;
- Housing conditions: significant increase in temporary and informal accommodation and extensive use of single persons' quarters for mine workers.

(Department of Housing 2007a)

Housing markets vary significantly across the region, with some communities experiencing extreme conditions, such as Moranbah where rents were nearly $600 Au per week for a three bedroom house in June 2006.

Moranbah is a purpose built mining town, established in 1971 by the Utah Development Company Ltd. Community facilities and houses for the mine workers and their families were constructed by UTAH and the Queensland Government and the town grew rapidly throughout the 1970's and into the 1980's (Galligan 1989). From the beginning Moranbah was an 'open' town with all regular local government functions and responsibilities vested in the Belyando Shire Council. The 2008 Census showed the population of Moranbah to be characterised as growing vigorously and comprising a significant proportion of non resident workers (Australian Bureau of Statistics 2008). Other key characteristics of the Moranbah population include:

- A relatively small, stable Indigenous population of 136 (2 per cent) of population which is less than the Queensland average of 3.3 per cent;
- a high proportion of young families. Children under 15 years comprise 27 per cent of the population compared to 20.7 per cent for Queensland;
- a very small proportion of older people. Only 1.1 per cent of Moranbah's population is aged over 65 compared with 12.4 per cent for Queensland; and
- A mobile population with 56.4 per cent of the population residing at a different address 5 years ago compared to 47.6 per cent for Queensland (Australian Bureau of Statistics 2007a; Australian Bureau of Statistics 2008).

Until the most recent resources boom, land and infrastructure in the town adequately met demand but with increased mining activity over the past five years, expansion of the town has been constrained by both the availability of land and the capacity of existing infrastructure. The main issues are that Moranbah is bounded on all sides by mining leases and dependent on a mining company owned water supply pipeline. These uncertainties and the potential value of coal under the Moranbah township result in tension and recurring speculation regarding the possibility of re-locating the town if coal prices make that economically viable. Such speculation contributes to a lack of confidence in the long term future of the town. Ongoing disputes between local government, State government and mining companies have contributed to difficulties in coordination of land development and infrastructure funding and provision between tiers of governments and the private sector. In the absence of agreement about the scale of projected growth and preferred footprint and sequencing strategies, planning and coordination of water, sewerage, roads, power and telecommunications infrastructure have been inhibited. The Queensland government generally takes an indirect role in local planning and housing strategies and expects local governments to take on this responsibility.

Moranbah's land use planning and housing strategies have been matters of considerable contention. Belyando Council strongly resisted housing options that implied impermanence of dwellings or of the town and it has been the primary residential land developer in Moranbah. It adopted policies aimed at attracting families as permanent residents and achieving high standards of housing, influencing estate design, establishing caveats on the size and standard of housing and targeting sales to owner occupiers. The Council also had a policy of allocating profits from land sales to fund affordable housing and is in negotiation with the State government to contribute funds to the construction of additional affordable housing supply.

The other main type of accommodation in Moranbah is relocatable single person quarters (SPQs). Approximately 900 of these are located in a large privately owned and managed village on the edge of town. The caravan park, at the time of the study, provided one of the few accommodation options for people unable to access or to afford the private rental market.

Generally, housing in Moranbah is of a high standard and there is a sense of it being a permanent and 'normalised' community. This stands in stark contrast to surrounding mining towns such as Nebo and Coppabella where free standing, temporary single persons units and non resident workers accommodation predominate. The less positive impacts of Belyando's policies include a limited supply and mix of housing with very little small lot or medium density accommodation which contributes to a supply shortage and a lack of affordable housing for rent or for purchase. Moranbah's housing therefore tends to fall into two extremes, large detached houses on large suburban lots or temporary SPQs and caravans, with little in between.

Moranbah's homeownership rates are very low at 43 per cent compared to 62 per cent for Queensland, reflecting expensive house prices, high levels of transience amongst the mining workforce and a general lack of confidence in the long term housing prospects for the local housing market. The housing market conditions are forcing lower income earners out of the market and creating a severe shortage of accommodation (Department of Housing 2007b). The Queensland government has been criticised by a range of stakeholders, including some from within State government agencies, for failing to understand and respond in a timely and co-ordinated manner to the implications of the coal mining expansion in the Bowen

Basin and for not having a government agency with overall policy and coordination responsibility for housing supply / affordability and mining development.

As is the case in Karratha, the housing affordability burden in Moranbah is carried mainly by employers and lower income households who are not able to access employer housing benefits. This particularly impacts on smaller and less profitable businesses. It also limits the opportunities for people to move into town unless they have already secured well paid work and accommodation and impacts on the ability of people on low incomes to remain in Moranbah.

Community Sustainability

The concept of community sustainability as it applies to mining towns is highly contentious. The cyclical nature of mining and the pervasiveness of its economic, environmental and social impacts inevitably raise issues about the implications for sustainable development of communities and regions (Brereton and Pattenden (2007). The case studies highlight the important role of inclusive land use and regional planning in addressing housing issues for mining communities. The key planning themes that emerge from the case studies are the importance of reliable population projections, proactive local land supply strategies and a regional planning focus.

Scarce housing limits diversity in the economy, the ability for private and public organisations to provide services and the opportunity for the towns to develop mature, functioning housing and labour markets. Without addressing housing scarcity with a high sense of urgency, many of the other strategies to build regional capacity will fail. The attractiveness of the communities and the continuity of services and infrastructure suitable for families are critical. Due to long term housing and social infrastructure shortfalls, especially in places like the Pilbara region over several decades, families tend only to stay in the region for as long as a job lasts and then move away (Australian Bureau of Statistics 2004; Pilbara Regional Council 2004; Australian Bureau of Statistics 2007a; Pilbara Development Commission 2007).

Since housing has such a significant impact upon the distribution of wealth, housing characteristics and tenure types also affect the welfare of occupants. Therefore housing issues are linked with important social policy issues. New development is stymied by the lack of a locally resident workforce and available accommodation for construction workers from outside the mining region. However, while there are housing, general affordability and infrastructure issues in the towns highlighted in the case studies, and many others like them, which are currently not being addressed, the potential to facilitate long term economic diversification in the regions of Australia are limited.

The limited supply and high cost of housing for purchase and rent creates problems for small and medium size businesses, community service organisations and local government in attracting and retaining staff. They report being under pressure to provide or subsidise housing which in turn feeds into higher costs which they can't afford or that undermine their competitiveness. Due to limited accommodation and high cost of living in these places a range of skill sets for all industries and other unrelated industries (such as child care, retail, service, health, education etc) are in short supply. This, combined with the nature and location of mining operations with industry cost structures leads to an increase in long distance commuting, labour force 'cannibalism' and poaching. All of these factors work against the development of resilient or sustainable communities and economies.

Social issues identified in previous studies of mining impacts on communities generally relate to the high reliance on FIFO and DIDO workers (Watts 2004; Gallegos 2005; Pilbara Industry's Community Council 2008). Issues of concern include the risks of driving fatigue for DIDO workers, the impact of the absence of mine workers on families and communities; the health impacts of workers living for extended periods in single person quarters, and the impact on mining towns of concentrations of non resident single males. Vehicle accidents, family breakdown, domestic violence, alcohol and drug misuse, excessive gambling, a shortage of volunteers participating in community and sporting organisations have all been cited (Rolfe 2006a; Construction Mining Forestry and Electrical Union 2007; Department of Housing 2007) Community representatives report a high level of alcohol consumption and gambling by workers residing in single person accommodation. Other issues identified include opportunistic prostitution by high school students in single person villages, high levels of consumer spending and debt by workers with high disposable incomes and the impact of income disparities on social cohesion and differentiation between children from mining and non mining families with lower incomes (Haslam McKenzie 2007; Haslam McKenzie, Brereton et al. 2009 (forthcoming)).

Some of these issues are a result of the employment policies of mining companies and the nature of mining work and are only indirectly related to the housing conditions. Firstly, to the extent that employer and worker decisions to drive in / drive out are influenced by the availability, cost and standard of accommodation in close proximity to mines. Secondly, the location, type and concentration of non resident worker accommodation are contributing factors. Nonetheless, the relationship between housing and social conditions in mining towns complex, multi-facetted and may be indirect and mediated by other contextual factors.

It is evident that market conditions have rendered the communities discussed here as unsustainable in the long term. The towns are important employment, transport and industry hubs and should be supported. Community sustainability is a crucial part of the mosaic. It is evident government has a role to mitigate the harsh impacts of supply and demand in the housing market. Government has a role in the overarching planning guidelines, land supply and the coordination within and between the different levels of government and, in turn, between mining companies and government. Improved facilities, such as education in the region would help retain longer term residents and would also keep a larger teenage cohort in the towns. Improvements to recreational infrastructure would also facilitate the retention of families with teenage children. This has multiple implications. For example, high school children are a valuable labour resource particularly in retail businesses. Importantly, they live with their family and therefore do not require additional housing. Similarly, high school children spend locally contributing to the local economy in a small but important way.

Discussion and Implications

The study confirms housing as a significant concern for mining communities, especially in the context of rapid expansion in mining activity. However, the case studies demonstrate how the nature and magnitude of housing stress differs among mining communities. These similarities and differences in the housing experience of the case studies are explored in this section.

The common housing concerns identified include the under supply, high cost and variable standard of housing as well as the mismatch between local needs and housing types and inequities in the social distribution of housing benefits. Housing is a basic need of individual households as well as a critical component of both social and economic infrastructure. Housing conditions are therefore integrally linked to a range of social and economic outcomes. The housing problems associated with the recent mining boom have been highly contentious and the subject of significant public debate. The two case studies, Moranbah in Queensland and Karratha in Western Australia, have been particularly prominent in media attention given to housing issues in mining communities.

Acceptance of housing problems as legitimate public policy concerns has been slow to emerge in both Queensland and Western Australia. This reflects reluctance by both governments and mining companies to accept responsibility for housing issues and a lack of consensus about their respective roles in facilitating housing market responses and addressing housing market failure. This situation must be seen in the context of Australia's heavy reliance on the market for housing provision and, consequently, the limited range of policy levers available to address housing issues. The choice of policy interventions in a given case is therefore influenced by socio-economic and politico-institutional factors. The historical and legal context for relationships between State governments and mining companies is one of these factors specific to mining communities.

At a general level it is possible to understand housing markets in resource towns as examples of economic 'supply and demand' theories in action. During boom times for the mining industry, house prices rise as demand outstrips supply and this stimulates housing investment in additional supply. Conversely, when demand declines during mining downturns house prices will fall. According to this analysis, markets will self correct, albeit with some lag time. However, housing markets in mining towns in this study face particular constraints, pointing to a need for more nuanced analysis to understand the different ways housing markets actually operate in specific mining town contexts.

Mining communities exhibit housing tenure characteristics significantly different to the Australian average. As reported, the two cited case studies have significantly lower levels of full homeownership than the Australian average and higher levels of rented properties. This is consistent with the more transient and temporary nature of the population in mining towns. Karratha and Moranbah have significantly higher levels of renting from ‘other landlord type’ indicating high rates of renting from employers in comparison with bigger, more diversified towns. Bigger, better established towns with greater industry diversity have higher levels of homeownership, nearly double the levels of home purchasers and lower rates of rented properties and higher rates of renting through real estate agents than Karratha and Moranbah.

Labour and material shortages, transport costs and lack of accommodation for construction workers are common challenges to be overcome in expanding housing supply in mining towns. In some circumstances, the reluctance of financiers to lend on homes in mining towns or their requirements for significant deposits before approving mortgages provides a further barrier to investment for home ownership and rental accommodation. Some of the extremes in the cost of housing in Karratha may be explained by its remoteness and therefore higher costs of construction. The time and cost involved in FIFO also increase demand for local housing compared to other towns, especially those in Queensland where DIDO to nearby seaboard regional centres is common. The high rent to house price ratios in Karratha and Moranbah indicate that investors require higher returns in more remote towns that are highly reliant in mining because they are more risky investments and have less predictable capital appreciation over the long term. These high rents are sustained by a lack of alternatives due to the remote location and the capacity for mining companies and high income employees to pay premium rents.

One of the key characteristics of housing markets in mining towns is the heavy reliance on non private accommodation and temporary accommodation such as:

- workcamps;
- single persons quarters;
- caravans; and
- motels and hotels.

The type, scale, location, standard and cost of temporary accommodation emerged from the study as significant issues that were the subject of considerable community concern. Access by non mine workers to temporary accommodation was also an issue, particularly in Moranbah where temporary accommodation for newly arrived residents, short term construction or service workers and access to the caravan park for low income locals was severely constrained. The same may be said for Karratha, where accommodation can be so scarce that newly arrived mine workers are reported to engage in “hot-bedding” and retail staff find housing in vacant warehouses, or rent rooms from strangers.

Concluding Remarks

Patterns of boom and bust in the resources industry are irregular and difficult to predict. This study provides evidence that both the speed and scale of the boom since 2001 and the recent slowdown resulting from the economic crisis were not anticipated by the mining companies, local and State governments or housing and land developers. When combined with the rural and remote locations of most mine sites and the lead time required for housing development it is unsurprising that residential land and housing supply markets were slow to respond in Moranbah to the requirements of increased demand. In Karratha however, reports since the 1980s identified the inadequate housing in the Pilbara region and that more should be done prior to the next boom cycle.

The case studies highlight a diversity of workforce and housing policies across the industry and even across the different sites of individual companies. This diversity and the willingness of mining companies to divert from their preferred policy positions on housing issues demonstrates a preparedness of mining companies to respond pragmatically to pressure from workers, local communities and government. It must be emphasised that difficulties in aligning housing supply with production demands is just one of the factors contributing to the increasing reliance of mining companies and contracting firms on FIFO and DIDO employment practices. Other significant factors include the preference of workers and their families to be based in capital cities or seaboard centres and the need to consider the sustainability of housing investments in locations with volatile mining activity.

These employment practices in turn impact on housing markets both in the mining towns where temporary accommodation is at a premium and workers’ location of origin. In Western Australia, the primary FIFO base of Perth and in Queensland the Bowen Basin DIDO base of Mackay experienced significant housing market impacts as a result of increasing housing demand and the high incomes associated with the mining boom.

The cyclical nature and employment practices of the mining industry therefore means that analysis of housing issues is extremely complex, requiring both temporal and spatial considerations. Temporal considerations include the housing implications of establishment, operational, expansion, wind down and closure phases in mining.

Spatial considerations include housing impacts at a local and regional level as well as for the key base locations for non resident workers.

The housing stresses found in the case study towns point to a lack of robust policy frameworks or governance arrangements capable of managing the housing implications of the resources boom. Indicators of shortcomings in policy and governance include: lack of accurate information to inform planning; fragmentation in responsibility; confusion of roles; and lack of forums capable of mediating between conflicting interests or co-ordinating responses. A recurring theme in this paper is the need to improve coordination within and between the different levels of government and, in turn, between mining companies and government. Better planning is critical to ensuring an adequate supply and mix of housing in mining communities and, in particular, to address the issue of affordability. While towns are vulnerable to the resources super-cycle their future is tenuous. If an effort was made to plan and design towns to enhance liveability and attractiveness, there is a greater likelihood of increased private investment in businesses and the community. Broadening the demographic and economic diversity of resource boom towns is essential if these communities are to achieve some measure of sustainability. This includes government's responsibility to ensure that economically disadvantaged people living in mining regions are not forced out, or kept out, due to a lack of affordable housing and/or infrastructure. The new State government in Western Australia has made a commitment to direct a much greater proportion of the royalties earned in the regions back to those regions. Many of the recommendations made here meet the guidelines for State investment in the regions outlined by the incoming government.

There are a number of obstacles to achieving effective planning, including the wide range of stakeholders that need to be involved in the process, the often limited capacity of local government and the regional offices of State agencies, and the inherent difficulty of predicting the scale and timing of future growth (particularly in a market-sensitive industry such as mining). Addressing these issues requires the establishment of new governance mechanisms at the regional level to provide a framework in which companies and the different levels of government can share information and collaborate on matters of common concern. Government's role is to lead and provide strategic guidance that will facilitate rather than hinder sustainable socio-economic and environmental development. It must also lead in the management of often complex cultural issues.

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