

The impacts of **resource** sector growth in **regional** communities

desktop matrix

March 2013

Stage 1



Acknowledgments

This project was funded by the Australian Department of Regional Australia, Local Government, Arts and Sport, and supported by the Queensland government. We gratefully acknowledge CQUniversity colleagues Dr Delwar Akbar, Dr Zobaidul Kabir, Lindsay Greer for their contributions in designing the stakeholder consultation survey; and Gail Tucker for her assistance with maps and report formatting. We also thank the over one hundred regional stakeholders who participated in the consultation phase of this project.

Disclaimer

This study has been produced in collaboration between the three Regional Development Australia organisations of Mackay Isaac Whitsunday, Fitzroy and Central West and Wide Bay Burnett. CQUniversity's Sustainable Regional Development Research Programme was commissioned to undertake the desktop review and stakeholder consultation exercises, as well as to assist the RDAs in forming the recommendations and action areas emerging from the study.

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Abbreviations

ABS	Australian Bureau of Statistics
ACARP	Australian Coal Association Research Program
ASU	Australian Services Union
AusIMM	Australasian Institute of Mining and Metallurgy
BSC	Banana Shire Council
CEM	Centre for Environmental Management
CIQ	Community Indicators Queensland
CQU	Central Queensland University, CQUniversity
CSRM	Centre for Social Responsibility in Mining
Cwlth	Commonwealth
Dept.	Department
e.g.	example
FCW	Fitzroy and Central West
FIFO	Fly-in; Fly-out
Inc.	Incorporated
IRC	Isaac Regional Council
ISRD	Institute for Sustainable Regional Development
LGAQ	Local Government Association of Queensland
MIW	Mackay Isaac Whitsunday
MWREDC	Mackay Whitsunday Regional Economic Development Corporation
na	not applicable
NDRP	Natural Disaster Resilience Program
OESR	Office of Economic & Statistical Research
R'ton	Rockhampton
PLC	Partnerships for Liveable Communities
Prof	Professor
QUT	Queensland University of Technology
R&D	Research and Development
RDA	Regional Development Australia
RDAFCW	Regional Development Australia Fitzroy and Central West
SEIFA	Socio-economic index for areas
SEQ	South-east Queensland
SoE	State of the Environment
UQ	University of Queensland
WBB	Wide Bay Burnett
W'sunday	Whitsunday

Introduction

Queensland's resource sector is driving rapid growth and this not only provides opportunities for regional economic development, but also puts pressure on local communities, their economies, lifestyle, environment and social wellbeing. To deliver sustainable solutions that address the region's social and economic challenges, it is imperative that a clear understanding of what the impacts from economic and population growth will have on the lifestyle and social well-being of regional communities.

Regional Development Australia (RDA) is a partnership between the Australian, State and local governments to support the growth and development of Australia's regions. RDA Mackay Isaac Whitsunday, Fitzroy and Central West, and Wide Bay Burnett are collaborating with Local Government Authorities and key regional stakeholders to pursue a focused, cross regional approach to resource sector opportunities and their economic, social and community impacts.

The purpose of this project was to use a partnership approach between three Queensland RDA committees, and CQUniversity, to better document, understand, and plan the response to the key pressures resulting from rapid growth of the resources sector. Specifically, the research involved a desktop review to identify and synthesise information on the cumulative, regional and cross-regional impacts of rapid development in the resource sector (mining, energy, construction and others areas), in the communities of Mackay Isaac Whitsunday, Fitzroy and Central West, and Wide Bay Burnett. This was done for a series of 10 thematic areas, which were identified as key areas for cumulative impacts, as well as reflecting the common issues shared by the three regions, in responding to the current and projected accelerated growth in the resources sector.

To ensure consistency across regions and themes, information was drawn from a range of sources, including local, state and Australian government; relevant statistics sources (OESR, ABARE, ABS); community and business groups; peak representative bodies; environmental and social and economic impact assessments prepared for specific resource projects; key research groups in Australia; major community development projects being undertaken by mining proponents, and the Parliamentary library (for submissions to the current Inquiry on the use of fly-in, fly-out work practices).

Project scope and key definitions

As regional development is a complex agenda, and there is a need to clearly articulate how this report can be narrowed to focus specifically on the cumulative, regional and cross-regional impacts of rapid development in the resource sector.

For the purposes of this report, the definition of '*cumulative impacts*' shall be adopted from that provided in Franks et al. (2010, p. 10):

'Cumulative impacts are the successive, incremental and combined impacts of one, or more, activities on society, the economy and the environment... [these] may be the product of past, present or future activities... can be both positive and negative and can vary in intensity as well as spatial and temporal extent'.

Cumulative impacts can also arise from interactions between issues, which may trigger a new 'tipping point' and the transition to a substantially different situation (Franks et al. 2010).

Regional impacts are those beyond a single activity or project, but which extend into multiple communities or locations within a geographic area (in this case, a region will be defined by the RDA boundaries). *Cross-regional impacts* are those that are shared or common across two or more regional areas.

The *resources sector* has been defined by DEEWR (2010, p. 1) as:

'mining, oil and gas operations, including operating mines, quarries, oil and gas wells, as well as constructing those operations. It also includes mining support activities such as fee-for-service activities and exploration. This is broadly consistent with the Australian Bureau of Statistics (ABS) definition of 'mining', but for the purpose of this paper it also encompasses resource processing activities, such as LNG production (ABS, 2008a)'.

This definition excludes the more general industries of transport, construction, and water, energy and waste, except where they are directly involved in supporting or enabling resource sector activity.

These types of impacts of rapid resource development in regions will be evident across a number of domains. Many of these are interlinked, so to avoid confusion, this project will adopt the following thematic areas:

1. Demographic and labour force shifts
2. Regional governance
3. Liveability, family and social wellbeing
4. Indigenous issues
5. Housing
6. Public health
7. Workforce planning, skills and education
8. Transport and development infrastructure
9. Water and energy
10. Environment and natural resource management

In the following section, each of these themes are explored through information matrices, which list key data, information, statistics, research, projects and/or programmes that are specifically relevant to the cumulative, regional and cross-regional impacts of rapid development in the resource sector.

It should be noted that this project sourced publicly available information using a range of desktop sources. A number of draft and/or confidential reports may also exist, in addition to those listed in the matrices below, but these could not be included in the study at time of writing.

Key findings

This exercise showed that the regional impacts associated with resource sector activity included those from the environmental, social and economic spheres. Predominantly, the impacts reported were negative ones; however, this may reflect the reality that most research studies and regional planning initiatives are focussed on identifying challenges rather than reporting on positive situations. Some of the positive impacts included population growth, employment creation and stimulation of regional supply chains. The review also included information about on-ground projects that were being undertaken in each region, where these were relevant to addressing the impacts of resource sector activity.

Overall, there was much less information available about possible impacts on the Wide-Bay Burnett region, compared with its northern neighbours: this is a likely reflection of WBB being only a recent entrant to the resource sector economy, and that their involvement (to date) occurs largely through mobile workforce provision, rather than hosting of resource development sites.

The two key findings from the desktop review were that there is a vast diversity of impacts that are being experienced by regional communities; and yet there is a lack of empirical data about the precise nature and extent of many of these impacts.

Theme 1: Demographic and labour force shifts

Synopsis

Regional population growth is a key driver for regional development activities, and population statistics are essential for future planning purposes. Population analyses are traditionally prepared based on natural birth/death and migration patterns within a geographic area; and they often provide information on particular subgroups (for example, gender, age, cultural background, resident compared with non-resident). However, in understanding boom-bust cycles in commodity markets, it is increasingly being recognised that rapid swells in population can occur specifically due to the nature of resource activity. For example, this may include new labour attracted by the construction and operations phases of large projects, as well as jobs growth in supporting sectors such as health, education, retail and services. Consequently, population analyses in resource regions need to include both demographic as well as labour force growth, as these can be important in driving trends such as perceived loss of community identity. For the resource sector specifically, it is also important to consider the nature of the workforce itself, that is, whether employees are resident or non-resident (with the latter referring to fly-in-fly-out, drive-in-drive-out and/or bus-in-bus-out arrangements).

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
Adam Rose, John Rolfe and Susan Kinnear, 2012, <i>An economic and demographic analysis of growth potential in the Central Queensland region</i> , Research report to the CQ NRL bid	CQUniversity	2012	All	<ul style="list-style-type: none"> the CQ region houses a 520,000 strong population, with the bulk being located in coastal centres currently available data indicate that, for every one resources-based job created in the region, an additional 3.5 jobs are created existing mid-range forecasts place the regional population at 790,000 by 2031; but this research suggests that in excess of 200,000 people will move into the region by 2018, simply from resource project activity alone
Redefining regional planning: managing change, measuring growth (Abridged report for Isaac Regional Council)	KPMG Consultants	December 2011	FCW	<ul style="list-style-type: none"> Non-resident FTE population of Isaac Regional Council is forecast to rise over 40% to reach 28,220 by 2012 this places IRC as the first-fastest municipality in Australia this growth poses a risk of service and infrastructure shortfalls
Professor John Rolfe, CQUniversity, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> Use of a non-resident workforce is now an integral part of many mining operations in Australia. In Queensland, the estimates of the number of workers commuting to mining regions by FIFO or DIDO for block shift periods are often underestimated. There may be perverse incentives for some companies to have DIDO and FIFO arrangements as a consequence of development conditions, fringe benefit taxes and industrial relations issues.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Centre for Social Responsibility in Mining, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> The lack of accurate, specific data about the extent of current and projected FIFO/ DIDO practice represents a major structural weakness in terms of formulating policy responses to the use of FIFO workforce practices.
Mackay Isaac Whitsunday Regional Economic Development Corporation, FIFO/DIDO Enquiry, Regional Submission to the House of Representatives Enquiry	MIW-REDC	October 2011	MIW (focus) and all	<ul style="list-style-type: none"> FIFO work practices underpin investment in resource regions Major structural change is needed if local communities are to be able to supply the labour for resource expansion, with a shortfall of some 7,355 jobs expected in the Bowen Basin by 2017 11 recommendations given regarding the balance of FIFO/locally sourced labour, availability of critical data (Census statistics), and the appropriateness of the EIS process in addressing multiplier effects.
Joint Fly-In and Fly-Out Discussion Paper, RDAFCW	RDAFCW	2001	FCW	<ul style="list-style-type: none"> A regular non-resident workforce is entrenched and growing in the Central Queensland mining industry. Census and population statistical data do not include regular non-resident workers in their respective demographics and surveys. RDAFCW is of the view that this is essential information and should be collected for regional economic, social and community planning and development purposes and be accompanied by policy measures that contribute to Local Government's increased liveability and sustainability responsibilities such as service and infrastructure delivery.
Surat Basin Population and Housing Study: Dalby-Roma Growth Corridor (under progress)	CEM	2012	FCW,WBB	<ul style="list-style-type: none"> This study predicted non-resident and resident population up to 2026. It found that there would be at least 20% increase in non-resident population in 2026, while resident population will increase by 50%. This is a research report, is under progress and FCW and WBB could use some of the predicted population figures for future planning and development
Whitsunday Regional Council, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	February 2012	All	<ul style="list-style-type: none"> WRC recommended that the Inquiry consider changes to the national Census to allow better capture of the number of non-resident workers; as these data are critical in information better allocation of royalties, government funding, and service provision in resource communities. WRC also highlighted the need to consider multiplier effects of resource-based employment and the challenges faced by service-based professionals (teachers, nurses) in coping with the high cost of living in resource communities

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Kinetic Group*, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia *Formerly, the Mining Industry Skills Centre	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	May 2012	All	<ul style="list-style-type: none"> Annual turnover rates in Queensland's non-resident workforce is more than double that of the wider workforce
Central Queensland Migration and Settlement Engagement Scoping Study	RDAFCW	2001	FCW	<ul style="list-style-type: none"> A scoping study into existing migration and settlement organisations networks and developing a collaborative arrangement and implementation strategy for Central Queensland. This network and strategy will assist in positive outcomes for the community in relation to the Australian Government's 'Building Australia's future through the well-managed entry and settlement of people' policy, especially relating to employment, education and health.

On-ground programs

None identified

Key data sources

OESR, Queensland	Queensland Treasury Department	Annual	FCW, MIW, WBB	<ul style="list-style-type: none"> Population and labour force data Non-resident workforce data
Census data, ABS	Australian Government	With Census	FCW, MIW, WBB	<ul style="list-style-type: none"> Population, housing and labour force data
Department of Mines and Energy	Queensland Government	Quarterly	FCW, MIW, WBB	<ul style="list-style-type: none"> Workforce data for resource sectors across Queensland
Gladstone Economic and Industry Development Board	Gladstone Economic and Industry Development Board	On request	FCW	<ul style="list-style-type: none"> Workforce and economic development data
Australian Government Department of Education, Employment and Workforce relations	Department of Education, Employment and Workplace Relations	Quarterly	FCW, MIW, WBB	<ul style="list-style-type: none"> Small Area Labour Market

Other projects

None identified

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

1. There is a lack of integrated modelling for the purposes of long-term population forecasting. New models are needed that are based on both life-cycle demographic characteristics as well as the resource boom cycle (e.g. multiplier effects of workforce statistics)
2. Properly quantifying the non-resident (FIFO/DIDO) workforce remains an ongoing issue

Theme 2: Regional governance

Synopsis

Regional governance refers to how people and organisations plan, control or regulate regional development behaviour, including the processes by which regions identify and develop their values, and the interactions between both government and non-government parties. For completeness, some aspects of regional policy have also been included in the table below.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
Supporting Queensland's Resource Regions - Recommendations for enhancing local government sustainability in regions with current or proposed mining and petroleum activity, Local Government Association of Queensland, position paper, 88 pages	www.lgaq.asn.au	September 2010	All	<p>The LGAQ recommends that the state government consider (amongst other points):</p> <ul style="list-style-type: none"> • legislative change, such as amending mining in and environmental protection legislation to require formal notice to local governments • the establishment of a long term funding stream for local government to support infrastructure projects in resource regions in the order of \$150M per annum, or 4.5% of mining and petroleum royalties, for five years <p>(Note: recommendations on state policy have not been reproduced here, due to the change to the LNP government in Queensland in 2012)</p>
Mackay Isaac Whitsunday, Mapping of Regional Strategies and Plans	RDA Mackay Isaac Whitsunday	May 2012	MIW	<ul style="list-style-type: none"> • Identification and collation of national (4), state (12) and local (11) planning documents relevant to the region • Some documents may be invalid/superseded due to the change of state government priorities following the 2012 election • Gap analysis was conducted in four pillars (hard infrastructure, economic development, natural assets and social inclusion/wellbeing)
John Rolfe & Stewart Lockie, 2010, Socio-economic Impact Assessment and Community Engagement to Reduce Conflict over Mine Operations, ACARP research report	Australian Coal Association Research Program (ACARP) at www.acarp.com.au	2010	All	<ul style="list-style-type: none"> • The broad aim of this project was to assist coal mining companies develop effective processes for engaging with their communities and developing impact assessment and planning processes that can be agreed by their stakeholders
Chris Moran, Robin Evans, 2009, The Response of the Australian Coal Industry to the Sustainable Development Agenda, ACARP research report	Australian Coal Association Research Program (ACARP) at www.acarp.com.au	2009	All	<ul style="list-style-type: none"> • This project had the objective of developing an approach to describe the response of the Australian coal industry to the sustainable development agenda.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Banana Shire Council, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	September 2011	FCW	<ul style="list-style-type: none"> There are non-existent or poor state planning processes to allow rural Councils to be able to plan and manage growth linked with FIFO/ resource development
Australian Services Union, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	May 2012	All	<ul style="list-style-type: none"> The ASU recommends the Australian Government address the conflicting outcomes from 2 areas of planning policy: the conflict between sustainable regional development planning and national resources management.
Isaac Regional Council, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	MIW	<p>IRC suggests (amongst other things):</p> <ul style="list-style-type: none"> imposing an immediate moratorium on the expansion of any further FIFO, BIBO, DIDO workforce residency solutions until a balanced assessment is undertaken of the long term effects of non-resident workforces in resource regions; Developing a sustainable land use strategy for the Isaac Region that guarantees coexistence of urban, agricultural and mining interests maximising the productivity of all sectors simultaneously Reform QLD mining and planning legislation to ensure the development of the state mineral resources is not disconnected from the maximisation of wealth generation and economic sustainability in the Isaac Region. Establish an independent planning commission to oversee the development of central Queensland inland cites serving the mineral development of the state.
Akbar, D., Rolfe, J. and Greer, L. [2010], Impact-Response-Monitoring Framework – Well-Being of the Australian, Mining and Regional Communities, Sustainable Mining Conference, Kalgoorlie, 17-19 August	The Mineral Institute, Australia/ online/ authors	2010	FCW, MIW, WBB	<ul style="list-style-type: none"> A 'pressure-state-response' approach to impact assessment is used to develop an 'impact-response-monitoring-evaluation' (IRME) framework that can be applied to ongoing evaluation and monitoring of social impacts. The framework is applied to coal resource developments in the Bowen Basin in Queensland to identify core requirements in a SIMP. The IRME framework is flexible enough to be implemented at various spatial and time scales, for the wellbeing of the local and regional mining and non-mining communities in Australia. The framework can be further used for regional governance issues.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
On-ground programs				
RDA Regional Roadmap	Mackay Isaac Whitsunday	2010/11	MIW	Describes the vision for MIW region as: <ul style="list-style-type: none"> • A vibrant progressive region where community and industry values are respected and balanced with those of the natural environment • Natural assets and resources are responsibly managed • Realising full regional potential through a diversity of industries and employment • A resilient and inclusive region with diversity, choice, and with healthy, active and safe lifestyles
RDA Regional Roadmap	Fitzroy and Central West	2010/11	FCW	Describes a vision for a liveable and sustainable CO, underpinned by: <ul style="list-style-type: none"> • Creating social value • Strengthening the region's economic contribution • Optimising environmental outcomes • Developing a culture of regional policy and innovation
RDA Regional Roadmap	Wide Bay Burnett	2010/11	WBB	Describes regional priorities of: <ul style="list-style-type: none"> • Strengthening our Regional Profile • Driving Economic Prosperity and Job Creation • Fostering Natural Resource Management and Sustainability • Advancing Education and Training • Supporting our Community and Social Wellbeing
Local Government Community Plans	Available for each local government area	2011-12 (various)	All	<ul style="list-style-type: none"> • Community plans are a legislative requirement for Local Governments in Queensland, which contain information about the current status and aspirational goals for communities, to enable prioritisation of initiatives for social, economic and environmental wellbeing.
CQ Regional Planning and Infrastructure Framework	Central Queensland Local Government Association (http://www.cqlga.asn.au/)	Under development	FCW	<ul style="list-style-type: none"> • The purpose of this project is to develop the strategic framework and direction for planning and infrastructure within Central Queensland for the period 2011-2031
Mackay, Isaac and Whitsunday Regional Plan	Department of State Development, Infrastructure and Planning (http://www.dlgp.qld.gov.au/regional-planning/)	February 2012	MIW	Planning for a resilient, vibrant and sustainable community <ul style="list-style-type: none"> • The Mackay, Isaac and Whitsunday state planning regulatory provisions ceased to have effect on 11 July 2012

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Wide Bay Burnett Regional Plan 2011 and Wide Bay Burnett State Planning Regulatory Provisions 2011	Department of State Development, Infrastructure and Planning (http://www.dlgp.qld.gov.au/regional-planning/)	September 2011	WBB	<ul style="list-style-type: none"> • 'Cultivating a strong, health and sustainable future for the Wide Bay Burnett' • Purpose of the plan is to manage regional growth and change in the most sustainable way to protect and enhance quality of life in the region • The Wide Bay Burnett state planning regulatory provisions ceased to have effect on 16 May 2012

Key data sources

Other projects

Central Queensland Regional Planning Committee	Members now being called from community/industry More information: http://dlgp.qld.gov.au/regional-planning/	July 2012	FCW	<ul style="list-style-type: none"> • Will develop the new statutory regional plan for Central Queensland
Central Queensland Local Government Association		na	FCW; MIW	<ul style="list-style-type: none"> • Representing and advocating for the needs of local government and their communities across Rockhampton Regional, Gladstone Regional, Banana Shire, Central Highlands Regional and Isaac Regional Councils
Wide Bay Burnett Regional Organisation of Councils		na	WBB	<ul style="list-style-type: none"> • Lobbies Australian and State Governments on behalf of members Councils (Bundaberg Regional, Fraser Coast Regional, Gympie Regional, North Burnett Regional, South Burnett Regional and Cherbourg Shire Councils)

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

1. There is a large array of planning effort being undertaken, but this doesn't appear to be cohesive.
2. There appears to be a lack of consistency in governance frameworks, for example, across resource industries, local, state and Australian governments, civil societies and the market
3. Local Government consistently report being placed under increasing pressures to deal with resource sector growth, yet are not being properly resourced to cope

Theme 3: Liveability, family and social wellbeing

Synopsis

This thematic area will focus on research, programs, and policies that relate to the provision of key services to assist communities to cope with, and respond to, development in the resources sector. It will include data and statistics on perceived quality of life for regional populations and the non-resident workforce, in relation to environmental, economic, human and social indicators. This section would also include comment on the social infrastructure that is designed to enhance liveability and wellbeing, including both physical buildings (e.g., recreational or community facilities) as well as capacity-building programs.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
MIW Liveability Audit	MWREDC; Centre for Environmental Management, CQUniversity	2008	MIW	<ul style="list-style-type: none"> The liveability of a region is an important measure of the progress that is being achieved in not only the provision of built infrastructure assets but also the sometimes less tangible soft infrastructure assets that constitute the life and soul of a region. A liveability audit connects objective and subjective measures of a population's well-being or quality of life with a specific geographic location. Findings from such audits can be used for planning and development for a city or region. <p>In summary the results indicate that:</p> <ul style="list-style-type: none"> The average liveability rating across the four dimensions of the MIW region by MIW respondents (54.53%) is higher than that of SEQ region respondents (49.60%). The Liveability rating from respondents in the Whitsunday region and the Mackay region is very similar but both rate the MIW region lower than respondents from the Isaac region. The MIW region scores highest in the economic and environment dimensions (56.59%, 55.75%) and the SEQ region scores highest in the economic and human dimensions (51.13%, 50.39%). The average rating of liveability for all areas surveyed from highest to lowest dimension is economic (54.89%), environment (54.37%), and human (52.33%) and social (50.83%).
Measuring Social Exclusion: Queensland Implications – R&D 2010 Qld Forum on Community Wellbeing – A/Prof Geoff Woolcock	Griffith University, Urban Research Program	2010	All Qld	<ul style="list-style-type: none"> Overview of measuring liveability

Reference	Source / availability	Date	Relevant region(s)^	Key findings
CIQ - Community Indicators Queensland	Griffith University; CQUniversity Partners	2010	Gladstone & Isaac (Pilot 2011)	<p>Local Initiatives</p> <ul style="list-style-type: none"> • Sunnybank Sustainability Indicators • Bowen Basin mining communities social indicators • Central Queensland indicators of community well-being • Brisbane Community Profiles (Brisbane City Council) • QCOSS Poverty Survey <p>Stakeholders:</p> <ul style="list-style-type: none"> • Australian Bureau of Statistics (ABS) • Office of Economic and Statistical Research (OESR) • Queensland Treasury • Queensland Health • Environmental Protection Agency • Department of Communities (including A&TSIS) • Arts Queensland • Department of Premier and Cabinet • Local Government Association Queensland • Individual Councils • QCOSS • EIDOS • Partnerships for Liveable Communities (PLC)
Resilience Profiles Project : Natural Disaster Resilience Program (NDRP)	QCOSS; Griffith University	2011-12	FCW - R'ton, Western Downs & Tablelands	<p>Key Question: Is there a link between socio-economic disadvantage (as per SEIFA scale) and natural disaster vulnerability?</p>
Miles, Greer, Kraatz, Kinnear, 2008, Measuring community wellbeing: A Central Queensland Case Study, Australasian Journal of Regional Studies, Vol. 14, no. 1.	CQUniversity	2008	FCW	<ul style="list-style-type: none"> • A "Six-by-Six" model was developed to measure community wellbeing • Six domains are constructed to cover economic, environmental and social wellbeing sections in a balanced manner. • The model was demonstrated through case study material from Central Queensland • The future development of the model and its potential for wider applications are also discussed

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Social Impact of Mining Survey: Aggregate Results Queensland Communities; Kerry Carrington & Margaret Pereira, School of Justice, QUT June 2011	QUT	2011	FCW, MIW	<ul style="list-style-type: none"> Survey of perceptions of how mining developments that rely on non-resident workers are impacting on communities. Perceptions found were mostly negative of FIFO employee arrangements
'Coal mining and the resource community cycle: A longitudinal assessment of the social impacts of the Coppabella coal mine', Environmental Impact Assessment Review, 29(5), 330-339. Lockie, S., Franettovich, M., Petkova-Timmer, V., Rolfe, J. and Ivanova, G. (2009)	CEM	2009	FCW, MIW	<ul style="list-style-type: none"> The traditional coupling of local economic vitality and community development to the life cycle of resource projects-the resource community cycle-was mediated by labour recruitment and social infrastructure policies that reduced the emphasis on localised employment and investment strategies, and by the cumulative impacts of multiple mining projects within relative proximity to each other. The resource community cycle was accelerated and local communities forced to consider ways of attracting secondary investment and/or alternative industries early in the operational life of the Coppabella mine in order to secure significant economic benefits and to guard against the erosion of social capital and the ability to cope with future downturns in the mining sector.
'Mining developments and social impacts on communities: Bowen Basin case studies', Rural Society, 19(3), 211-228. Petkova, V., Lockie, S., Rolfe, J. and Ivanova, G.	CEM	2009	FCW, MIW	<ul style="list-style-type: none"> In this paper, qualitative social impact assessment techniques have been used to independently assess post-development impacts of mining on six communities in the Bowen Basin in Queensland, following the boom in coal prices between 2003 and 2008. The communities are similar in that they all have at least one mine in the vicinity and have more male than female residents but they differ in town histories, and the size plus growth rate of both their permanent and temporary populations. While the mining boom has been generating social and economic impacts, the patterns of the impacts appears to vary across communities depending on the size of the impact, community structure and history, and the extent to which a non-resident workforce is involved.
International Mining for Development Centre Mining for Development: Guide to Australian Practice: Social impact assessment of resource projects; Daniel Franks	UQ, CSRM	2012	MIW (Clermont)	<ul style="list-style-type: none"> Overview of the social impact assessment process and guidelines for best practice.
Franks, DM, Brereton, D, Moran, CJ, Sarker, T and T, Cohen, 2010, Cumulative impacts –a good practice guide for the Australian coal mining industry, ACARP research report	CSRM; ACARP	2010	CFW, MIW	<ul style="list-style-type: none"> Overview of cumulative impacts and assessment practice – provides a practical resource to assist companies and governments assess, manage and monitor the cumulative social, economic and environmental impacts of large-scale mining at the local and regional scale.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
CPP Evaluation report: Evaluation Report of the BMA Community Partnerships Program: A Summary	CSRM	2009	FCW, MIW	<p>An independent review of BMA's Community Partnerships Program (CPP). The purpose of the review was to evaluate the program's performance against stated objectives, assess the overall structure, balance and cohesion of the CPP and make recommendations about its future focus, including areas for improvement. Key findings of the evaluation report are as follows:</p> <ul style="list-style-type: none"> • The CPP is highly valued by BMA's partners. • The CPP has been successful in leveraging matched funding from government departments and local councils. • Despite varying program scopes and capability of partner organisations, most partners were able to demonstrate positive outcomes from their programs. • The current reporting pro forma is regarded negatively by virtually all partners. • Addressing issues of performance measurement and reporting are critical to the future of the CPP. • A great strength of the CPP is its consideration of local community needs and the desire to invest in social programs that are of value to BMA employees and their families. • The CPP must do more to connect sites with stakeholders in Mackay, the regional centre. • BMA should consider proactive project generation to address social issues, instead of relying solely on partners to generate proposals. • BMA should increase the level of engagement of site management in the CPP review process.
Family Relationship Centre: Benchmarking and Action Research; Greer, L., Miles, R., Mann, J., Ronan, K.	ISR, CQUniversity; Centacare, Family Relationship Centre (Rockhampton)	2008/09	FCW	<p>An initial exercise to develop meaningful benchmarked measures by which to evaluate the activities of the Rockhampton FRC. The key findings of the literature review undertaken in this report, suggest that the following issues are of concern and debate:</p> <ul style="list-style-type: none"> • Initiatives to support families • Keeping families out of the court system • Child focused mediation • Mediation styles • Compulsory vs. Voluntary mediation <p>Anecdotal evidence of mining workers as clientele however not viewed as disproportionate during research period; requires further empirical investigation.</p>

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Social issues relating to permanent and non-permanent residents in the Moranbah mining community, Regional Social Development Centre, on behalf of Isaac Regional Council	Regional Social Development Centre	March 2011	MIW	<ul style="list-style-type: none"> • Review of socio-economic issues facing mining town communities • Case studies on positive and negative impacts (economic advantages, reduced crime, gender imbalance, violence, alcohol over-consumption, lack of social integration; staff attraction/retention, declining volunteerism) • Community perceptions study on social issues regarding to non-resident workers
Bowen Community Hub Feasibility Study, Regional Social Development Centre, for the Bowen Community Council Incorporated, 65 pages.	Regional Social Development Centre	September 2011	MIW	<ul style="list-style-type: none"> • Identified two possible sites, tenants, building costs and best practice methods for development a community hub; inclusive of neighbourhood and family centre; clinical, non-clinical, allied health and health promotion service providers, and other social service providers • Further discussion/study is needed in relation to possible land use constraints as well concept design (for example, co-development of artspace/gallery and library).
Regional Social Priorities Mackay, Isaac and Whitsunday	Regional Social Priorities Group	March 2012	MIW	<ul style="list-style-type: none"> • Five key priority areas were identified (housing, homelessness, transport, health care services, affordability), and recommendations provided in regard to tackling these issues. • The report highlights the value of investment in social planning (including the costs of inaction).
Report of a Social Facilities Infrastructure Audit of the Mackay Whitsunday Region, prepared by the Social Sector Reference Group of the Whitsunday Hinterland and Mackay (WHAM) Regional Plan, 57 pages	Online	2008	MIW	<ul style="list-style-type: none"> • a listing of physical facilities for the provision of social services in the Mackay Whitsunday region, and the planning of future social facilities requirements • Existing shortfalls in 2008 were clustered around youth, neighbourhood, seniors and community facilities, child care, after-school care, cultural services, art galleries/museum/performing arts spaces, and women's shelters.
Community Attitudes to Coal Seam Gas and Coal Mining Activities in Central West Queensland, Research report for the Remote Area Planning and Development Board (RAPAD)	RAPAD - online at http://www.rapad.com.au/web/guest/policy-and-submissions	2011	FCW	<ul style="list-style-type: none"> • Results of a community survey (n=610) from the Central West local government areas • Includes responses on issues such as benefits and disadvantages of CSG/coal developments, and the methods by which the community could be more informed
Changing Times Workshop Report, The Rural Financial Counselling Service and RAPAD	RAPAD - online at http://www.rapad.com.au/web/guest/policy-and-submissions	2011	FCW	<ul style="list-style-type: none"> • One of the key issues for the community is its ability to manage change (e.g. the host of issues related to resource development) • There is a difference between 'chosen' and 'unchosen' change

Reference	Source / availability	Date	Relevant region(s)^	Key findings
FIFO Families, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> The most pressing issues facing spouses and partners of FIFO workers are isolation, loneliness, trust and resentment. Exhaustion from sole parenting during rostered-on periods is also a key problem There is a need to build local community groups to support FIFO partners and families
Rio Tinto, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	November 2011	MIW; FCW	<ul style="list-style-type: none"> Mackay and Rockhampton have become the towns of choice for commuting workers in Central Queensland due to their proximity to the mines, the coastal lifestyle and access to amenities.
Regional Social Development Centre, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	MIW	<ul style="list-style-type: none"> Lists some key impacts of non-resident workforce on established communities, including provision of services, infrastructure and housing availability Provides some strategies to optimise FIFO/DIDO experiences for employees, families, community and industry
The MAC Services Group Pty Ltd, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	MIW; FCW	<ul style="list-style-type: none"> Food and service quality in mining accommodation is critical to the wellbeing of the FIFO/DIDO worker
Dysart Community Action Association, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	January 2012	MIW	<ul style="list-style-type: none"> Flow-on impacts of the trend toward non-resident workforce has resulted in only one national service group left in Dysart, and with a very small membership
Various Social Impact Assessments: e.g. Socio-Economic Impact Assessment – Grosvenor Project;	Hansen & Bailey; Anglo Coal (Grosvenor) Pty Ltd	2010	FCW, MIW	<ul style="list-style-type: none"> The impact assessment quantifies the potential positive and negative social and economic impacts associated with the construction and operation of the Grosvenor Project.
Socio-Economic Impact Assessment – Codrilla	MacArthur Coal; CEM CQUniversity		FCW, MIW	<ul style="list-style-type: none"> Development of a Social Impact Management Plan – mitigation of mine development impacts outlined.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Socio-Economic Impact Assessment of the Coppabella underground project; Akbar, D., Rolfe, J., Ivanova, G., Greer, L., Donaghy, P., Petkova, V.	McCollum Environmental Services Pty Ltd; CEM CQUniversity	2010	FCW, MIW	<ul style="list-style-type: none"> The impact assessment quantifies the potential positive and negative social and economic impacts associated with the construction and operation of the Coppabella Underground Project.
Social Wellbeing in the Mackay-Isaac-Whitsunday Region, September 2012 (Draft report only)	RDA Mackay Isaac Whitsunday	2012	MIW	<ul style="list-style-type: none"> Contains the results of an community survey with 47 respondents Highlighted social problems within the region, the key challenges for community organisations, and strategies for responding. Obtaining accurate population counts, clarifying roles and responsibilities, and adopting a collaborative, proactive planning approach were acknowledged as key strategies
SEAT Socio Economic Assessment Toolbox - Middledmount	Anglo Coal American	2007-2008	FCW, MIW	<ul style="list-style-type: none"> Assessment of community perceptions of mine impacts – Standardised tool.
Akbar, D., Greer, L and Rolfe, J.[2009], Capitals in Non-Capitals: Liveability in Regional Australia, Pacific Regional Science Conference 2009, Gold Coast, 19-22 July.	CEM, CQUniversity/ PRSC	2009	MIW	<ul style="list-style-type: none"> Overall liveability in MIW region as reported by the respondents has been at an average level. People usually report relatively low level of satisfaction with the social and human capitals in the MIW region and high level of satisfaction with economic and environmental capital. The challenge of addressing regional liveability deficiencies largely depends on the capacity of the regions leaders to plan and develop better human and social infrastructures. This requires participation from all tiers of government to adopt a regional development action plan with a view to increase the overall liveability of the region and such a plan will positively impact on the sustainability of the region

Key data sources

Qld Government initiatives	Queensland Government	2010	All	<ul style="list-style-type: none"> Q2 targets Communities Statistical Information System (COMSIS), Dept. of Communities Partnerships Queensland Office of Economic & Statistical Research (OESR) Social Wellbeing State of the Environment (SoE)
Census data, ABS	Australian Government		FCW, MIW, WBB	<ul style="list-style-type: none"> Australian Social Trends, Measures of Australia's Progress, Regional data
OESR, Queensland	Queensland Treasury		FCW, MIW, WBB	<ul style="list-style-type: none"> Regional data, Non-resident population reports, Issue specific reports
Aboriginal & Torres Strait Islander Affairs	Queensland Government		FCW, MIW, WBB	<ul style="list-style-type: none"> Government reports and data

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Centre for Environmental Management	CQUniversity		FCW, MIW, WBB	• Various research reports, consultancies, library/ database resources
Centre for Socially Responsible Mining	University of Queensland		FCW, MIW, WBB	• Various research reports, consultancies, library/ database resources
Regional Economic Development Corporation of Mackay and Whitsunday	Regional Economic Development Corporation of Mackay and Whitsunday		MIW	• Socio-economic data

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

1. There are many anecdotal reports of declining liveability issues relating to resource-based communities. However, there is limited academic work in this area with most policy instead being based on anecdotal evidence and/or political pressure.
2. There has been a tendency to collapse the 'social' indicators into measures of hard infrastructure (such as buildings).
3. There is a need for separate subjective and objective measures of liveability and well-being of regional communities, especially under different geographical scale or different sizes of communities.
4. Most studies on liveability is about 'perceived' liveability but not real liveability, so there is a need to explore the gap between perceived and real liveability.

Theme 4: Indigenous issues

Synopsis

For the purposes of this project, cultural aspects will be defined as only those issues linked with Indigenous peoples, places and/or values. As such, diversity issues will not be included (e.g. skilled migrants, heritage, non-English speaking backgrounds).

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
Queensland Closing the Gap Report: 2008/09 Indicators and Initiatives for Aboriginal and Torres Strait Islander Peoples	Queensland Government	2009	Bundaberg, Fitzroy Central West, Mackay W'sunday Isaac	<ul style="list-style-type: none"> The report has information on the gap in life outcomes between Indigenous and non-Indigenous Queenslanders. It also details the Queensland Government's strategies for closing the gap
Annual Highlights Report for Queensland's Discrete Indigenous Communities for the period July 2010 – June 2011: Incorporating the Quarterly report on key indicators in Queensland's discrete Indigenous communities for April - June 2011	Queensland Government		Bundaberg, Fitzroy Central West, Mackay W'sunday Isaac	<ul style="list-style-type: none"> The report has been structured by community. Each community section contains a community profile, a community highlights report by the Government Champion, and data in relation to community wellbeing. An overview and an examination of general trends across six measures are provided from 2002/03 where data are available.
Experiences of Indigenous Women in the Australian Mining Industry. In Gendering the Field: Towards Sustainable Livelihoods for Mining Communities	Edited by Kuntala Lahiri-Dutt Sustainable Minerals Institute	2011	International and regional perspectives	<p>This volume presents a selection of papers that were presented at an international workshop on 'Mining, gender and sustainable livelihoods', organised to disseminate the results of an 'action research' project. Content areas include:</p> <ul style="list-style-type: none"> Gendering the masculine field of mining for sustainable community livelihoods Modernity, gender and mining Bordering on equality: women miners in North America Sex work and livelihoods: beyond the 'negative impacts on women' in Indonesian mining Experiences of Indigenous women in the Australian mining industry Indigenous women and mining agreement negotiations Gender-based evaluation of development projects: the LAST method Women-owned SMEs in supply chains of the corporate resources sector On the radar?: gendered considerations in Australia-based mining companies' sustainability reporting, 2004–2007 Towards a post-conflict transition: women and artisanal mining Artisanal and small-scale mining: gender and sustainable livelihoods in Mongolia Gender mainstreaming in Asian mining

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Increasing Indigenous Female Participation in Mining - Paper presented at the Mineral Conference Australia SD07 conference, Cairns Oct 29 - Nov 2, 2007.	Parmenter J and Kemp D Sustainable Minerals Institute	2007	QLD	<ul style="list-style-type: none"> This paper draws on three recent studies conducted by the Centre for Social Responsibility in Mining (CSRSM), each of which has involved participation of Indigenous women. The aim of the paper is to outline some of the issues and challenges faced by Indigenous women working in mining, and articulate potential strategies for attracting and retaining Indigenous women across all work roles and levels in mining.
Limerick M., Tomlinson K., Taufatofua R, Barnes R. and Brereton D. 2012, Agreement-making with Indigenous Groups: Oil and Gas Development in Australia. Brisbane; CSRSM. University of Queensland. ISBN number 978-0-9873402-0-7.		2012	WBB, FCW	<ul style="list-style-type: none"> Provides source material and an analysis of trends in Australia regarding the challenges of negotiating and implementing agreements with Indigenous groups.
Good Practice in Mentoring of Indigenous Employees; Prof David Brereton (Project Manager); Dr Rosemary Taufatofua (Lead Author)	CSRSM	2010	North-West QLD	<ul style="list-style-type: none"> Provides a brief overview of Indigenous Mentoring Programs across Australia, highlighting key learnings which can provide a good foundation for a mentor training program and mentoring programs to encourage employment recruitment and retention amongst Indigenous people in the minerals extraction industry.
Increasing Indigenous Employment and Economic Participation in the Bowen Basin Coal Industry: Report: Mr Pat Vidler, URS*	CSRSM	2010	MIW; FCW	<ul style="list-style-type: none"> Provides an overview of Indigenous involvement in the Bowen Basin coal industry (including the coal seam gas extraction industry) and also documents current or recent industry and government initiatives aimed at increasing that involvement. Assesses opportunities to achieve a sustainable increase over the longer term in the direct and indirect employment of Indigenous people in the Bowen Basin coal industry (including the coal seam gas extraction sector) and to grow associated Indigenous businesses. Outlines potential options for a regional initiative for consideration by industry stakeholders.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
<p>Earth Matters: Indigenous Peoples, the Extractive Industries and Corporate Social Responsibility, edited book by Ciaran O’Faircheallaigh and Saleem Ali.</p> <p>Chapter contribution: Indigenous employment outcomes in the Australian mining industry, by Tanuja Barker, Centre for Social Responsibility in Mining, University of Queensland, Australia</p>	CSRSM	2008	All	<ul style="list-style-type: none"> • There is growing interest in improving indigenous employment levels within mining • There has been recognition by leading companies of the need to address poor socioeconomic conditions in many Aboriginal communities. • To date little has been done to measure the benefits of mining employment for individuals or communities, or to identify and analyse possible negative impacts. • More data and information are needed to inform the design of indigenous employment programmes to help maximise benefits and minimise adverse impacts for individuals, families and communities.
<p>Earth Matters: Indigenous Peoples, the Extractive Industries and Corporate Social Responsibility, edited book by Ciaran O’Faircheallaigh and Saleem Ali.</p> <p>Chapter contribution Understanding corporate -Aboriginal agreements on mineral development: a conceptual framework, by Ciaran O’Faircheallaigh</p>	Department of Politics and Public Policy, Griffith University, Australia	2008	All regions	<ul style="list-style-type: none"> • The negotiation of legally binding agreements between Aboriginal peoples and mining companies is now a central component of corporate social responsibility (CSR) in settler societies such as Australia and Canada. It is also increasingly a legal requirement for the granting of mining interests on Aboriginal lands. The making of agreements is generally regarded as unproblematic and positive in the literature on CSR and Aboriginal peoples. • In reality Aboriginal–mining company agreements raise major issues in terms of Aboriginal relations with other political actors and institutions, including government, environmental groups and the judicial system. This chapter examines those implications by modelling changes in an Aboriginal group’s wider political and institutional relations that can follow on from signing an agreement with a mining company. It concludes that, while agreements certainly offer benefits to Aboriginal groups, they can also result in the loss of legal rights and political opportunities. In order to maximise benefits from resource development on their traditional lands, Aboriginal groups need to carefully map, evaluate and develop strategies for dealing with the changes likely to arise from agreements.
<p>Considering the Experience of Indigenous Women Working in the Australian Mining Industry: Gender and Mining Conference, ANU, Canberra; Parmenter, J</p>	CSRSM	2008	North West Qld	<ul style="list-style-type: none"> • Highlights how the challenges faced by women working in the Australian mining industry can be compounded for indigenous women due to additional familial and cultural responsibilities. It is important that the resources industry does not consider gender alone, but includes other intersecting identities and factors such as race, class and the local socio-political and cultural context of the women affected.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Why Cultural Heritage Matters: Rio Tinto – Resource Guide: Elizabeth Bradshaw Principal advisor Communities and Cultural Heritage, Rio Tinto elizabeth.bradshaw@riotinto.com	Rio Tinto	2011	Global	A guide written specifically for Rio Tinto employees working at Rio Tinto operations around the world, including FCW and MIW
RTCA Aboriginal Community Profile – Bowen Basin – Final Report	RTCA & CSR	2009	FCW, MIW	This study identifies and documents, through available information: <ul style="list-style-type: none"> • a socio-economic profile of the Indigenous communities of Interest connected to the RTCA mining operations • potential opportunities to overcome concerns and strengthen the socio-economic capabilities of the communities of interest • Specific project priorities identified by Indigenous stakeholders which enable more active economic participations.
Central Queensland Indigenous Organisational Engagement Scoping Study	RDAFCW	2011	FCW	<ul style="list-style-type: none"> • The purpose of this Scoping Study was to enhance RDAFCW's Indigenous engagement practices and subsequent decision making processes by – identifying local representative stakeholders who are willing to work collaboratively with RDAFCW in the provision and receipt of current, valid, inclusive and relevant knowledge transfer. • RDAFCW proposes the establishment of the Central Queensland Indigenous Advisory Reference Group (CQIARG).
The Palace Scoping Study	RDAFCW	2011	FCW	<ul style="list-style-type: none"> • The purpose of 'The Palace' Scoping Study is to provide Regional Development Australia Fitzroy and Central West (RDAFCW) with a level of detailed information on the cultural significance, protocols and required statutory and legislative process that is necessary to assess the level of legal and cultural appropriateness of future development applications. This includes all or parts thereof the noted Aboriginal Rock Art site namely 'The Palace'.
Non-indigenous cultural heritage survey of Ellensfield Coal Mine Project Central Queensland	Archaeo Cultural Heritage Services	2008	FCW, MIW	<ul style="list-style-type: none"> • Impact assessment

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Interactions with Indigenous Communities of Interest in the Bowen Basin – Draft Supplementary Report	RTCA & CSR	2010	FCW, MIW	<ul style="list-style-type: none"> The purpose of this study is to provide RTCA's Aboriginal Community Development Funds (ACDFs) with information to contextualise Indigenous issues regionally, assist with identification of priorities for funding, and provide a baseline for evaluation of funded projects. As part of the data collection for the RTCA Aboriginal Community Profile, CSR undertook a program of intensive face-to-face dialogues with the region's TOs, service providers, and relevant RTCA employees in operational and supervisory roles.
On-ground programs				
Indigenous Employment program: STEPS Truck Start IEP	Minister for Indigenous Employment and Economic Development – Australian Government	2011	Bundaberg, Fitzroy Central West, Mackay W'sunday Isaac	<ul style="list-style-type: none"> Participants in the project will be supported with four weeks of pre-employment training addressing any barriers to employment they may face. Receive 10 hours of truck driving lessons allowing them to upgrade to a Heavy Rigid or Medium Rigid truck licence. At the conclusion of the project, participants will be individually marketed to potential employers and will continue to be mentored for the first six months of their employment." The program has been developed in consultation with local Job Service Australia providers, Skills Training Mackay and local employers and is being managed by Indigenous Employment Provider Steps Disability Inc.," Senator McLucas said.
Indigenous Women in Hard Hats mining industry program (Burton Mine, Central Queensland)	Queensland Government, QRC & Thiess	2011	MIW	<ul style="list-style-type: none"> The Indigenous Women in Hard Hats program won "Best Company Initiative" in the 2011 Queensland Resources Council Awards for Women. Recruitment programs to attract and retain female employees that offer flexible hours, home-based work and financial education assistance. A range of personal protective equipment (PPE) items specifically designed for women
Just Futures 2012-2015 Growing community, family, opportunity and justice for Aboriginal and Torres Strait Islander Queenslanders	Queensland Government	2012	Bundaberg, Fitzroy Central West, Mackay W'sunday Isaac	<ul style="list-style-type: none"> Strategies to improve the well-being, education and employment and ensure access to a culturally responsive justice system
Alcohol Reforms	Queensland Government	2008 (Quarterly reports)	Bundaberg, Fitzroy Central West	<ul style="list-style-type: none"> The aim of alcohol reforms is to reduce alcohol-related harm, especially to children, women and other vulnerable community members. This is being achieved through alcohol restrictions, improved services and partnerships between government and community, including support for positive community actions.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Indigenous Youth Leadership Program	Dept. of Education, Employment and Workplace Relations	2012 ongoing	Bundaberg, Fitzroy Central West, Mackay W'sunday Isaac	<ul style="list-style-type: none"> The Indigenous Youth Leadership Program (IYLP) is helping to close the gaps in Indigenous educational disadvantage through creating greater access to additional education choice for Aboriginal and Torres Strait Islander students. The IYLP supports a number of Aboriginal and Torres Strait Islander students to attend high performing secondary schools (government and non-government, day and boarding) and/or universities to complete Year 12 and/or an undergraduate degree.
Woorabinda Employment and training program	CQID	Ongoing	FCW	<p>The program will engage 50 participants for up to 104 weeks and includes four interchangeable stages, allowing participants to move forward or revisit any stage as required. The following training opportunities have been identified by community and industry collectively:</p> <ul style="list-style-type: none"> rural operations civil construction asset maintenance community services hospitality/tourism administration primary health meat processing mining

Key data sources

ABS AIATSIS Central Queensland Indigenous Development Nulloo Yumba, CQUniversity	Australian Institute of Aboriginal and Torres Strait Islander Studies			
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Other projects

None identified

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

- There are a range of reports available, but most work is outside of the CQ region – tailored datasets and findings are in scarce supply.
- There is a sense of commitment to increased participation levels for Indigenous peoples in the resources sector, as well as better cultural outcomes overall in resource-based communities
- Despite this, Engagement efforts in regional communities within Central Queensland do not appear to be as mature as those in other places (e.g. Pilbara).

Theme 5: Housing

Synopsis

Housing refers to the provision of both residential housing and non-resident accommodation for employees within the resources sector. This includes the status quo of current housing market situation (sales, rent and vacancy rates, price impact and affordability price points), as well as the future demand-and-supply situation such as number of dwellings unit requires, land release, housing lot approval and registration.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
John Rolfe, Miles, R., Galina Ivanova, Delwar Akbar, Lindsay Greer and Yabsley, E., 2009, Ensuring Sustainable Benefits from Boom Periods: A case study for long term housing policy in the Bowen Basin (Final Report prepared for Department of Tourism, Regional Development and Industry, QLD), ISRD, CQUniversity, Rockhampton.	ISRD, CQU and Queensland Department of Tourism, Regional Development and Industry	2009	FCW, MIW	<ul style="list-style-type: none"> • Long term housing demand for some mining towns within the FCW and MIW regions • Housing choice by the mine employees • Socio-economic condition of the mine employees
Mckenzie, F.H., Phillips, R., Rowley, S., Brereton, D. and Birdsall-Jones, C., 2009, Housing market dynamics in resource boom towns, AHURI Final Report No. 135, Australian Housing and Urban Research Institute, AHURI Western Australia Research Centre, Perth.	AHURI	2009	MIW	<ul style="list-style-type: none"> • Housing demand predictions • Housing market analysis
Rolfe, J., Lockie, S., Ivanova, G., Akbar, D., Timmer, V., Greer, L., Yabsley, B., and Pudasaini, K., (2010), Assessing Housing and Labour Market Impacts of Mining Developments in Bowen Basin Communities (Report prepared for Australian Coal Association Research Program), CEM, CQUniversity, Rockhampton.	Centre for Environmental Management, CQU and ACARP	2010	FCW; MIW	<ul style="list-style-type: none"> • Long term housing demand for some mining towns within the FCW and MIW regions • Housing supply strategy • Housing choice by the mine employees • Decision tree to measure labour and housing impacts in the mining towns
Mackay Regional Council - Mackay Tourism, 2010, Mackay Accommodation Study, Future Needs Analysis, Regional Development Corporation, Mackay-Whitsunday	Regional Development Corporation, Mackay-Whitsunday	2010	MIW	<ul style="list-style-type: none"> • Short-stay accommodation such as hotel and motel need analysis • Market characteristics • An additional 764 rooms required to 2025, under the minimum growth rate scenario (1875 at the high-growth scenario)

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Akbar, D., Clarkson, I. and Rolfe, J. (2010) "Impact of GFC in Housing Market in Regional Australia: Lessons from the Central Queensland"; paper presented at the international Asia-Pacific Network for Housing Research conference, Renmin University of China, Beijing, China, 21-22 August.	Centre for Environmental Management, CQUniversity and Asia- Pacific Network for Housing Research	2010	FCW, MIW	<ul style="list-style-type: none"> • Impact of global financial crisis in the housing market • Housing market trend and pattern • Driving forces of housing market
Rolfe, J., Akbar, D. and Kabir, Z. (2012): Gladstone Population and Housing Study – Social Impact Assessment, (Report prepared for Lyons Capital, Melbourne), CEM, CQUniversity, Rockhampton.	Centre for Environmental Management, CQUniversity and Lyons Capital (This is a contract research and therefore it requires Lyons Capital permission to access to this report).	2012	FCW	<ul style="list-style-type: none"> • Housing demand forecasting for the Gladstone region • Population and price impacts of housing • Forecasting housing price
Banana Shire Council, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	September 2011	FCW	<ul style="list-style-type: none"> • BSC suggests reinstatement of the tax incentive for resource companies to offset the cost of constructing housing
AusIMM Minerals Institute, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> • Recommendation to release affordable land in regional areas with tax incentives to offset the additional cost of construction.
Gladstone Housing Need Analysis	Akbar and Rolfe, CEM, CQUniversity	July 2012	FCW	<ul style="list-style-type: none"> • According to the price point estimation method described earlier, we found an affordable price point for rental accommodation is between \$305 and \$379 while GLNG (2011) estimated this range between 230 and 460. • By 2022, about 12,000 new dwellings need to be built in the Gladstone region.
GLNG 2011, GLNG Integrated Project Housing Strategy [Online].	Online	2011	FCW	<ul style="list-style-type: none"> • Affordable price point and housing market analysis for the Gladstone region.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
On-ground programs				
National Rental Affordability Scheme	http://www.fahcsia.gov.au/our-responsibilities/housing-support/programs-services/national-rental-affordability-scheme	2011	All	<ul style="list-style-type: none"> Addresses shortage of affordable rental housing Incentives for 420 dwellings have been allocated in the regional locations of Bundaberg, Emerald, Gladstone, Mackay and Townsville (as at the end of September 2011).
Housing Affordability Fund	http://www.fahcsia.gov.au/our-responsibilities/housing-support/programs-services/housing-affordability-fund	2011	All	<ul style="list-style-type: none"> Designed to assist families and communities to reduce the cost of new homes In Queensland, \$2.5 million has been approved to fund development of 63 affordable residential lots in the township of Nebo, 100km from Moranbah.
Key data sources				
RP Data	RP Data Ltd		FCW, MIW, WBB	House sales data
RTA, Queensland	Queensland Rental Tenancy Authority		FCW, MIW, WBB	Rental Information
Regional Economic Development Corporation of Mackay and Whitsunday	Regional Economic Development Corporation of Mackay and Whitsunday		MIW	<ul style="list-style-type: none"> Socio-economic data Housing and accommodation data
Queensland Government, 2011, Gladstone Housing Quarterly Report – August 2011, Arrow Energy, Australia Pacific LNG, QGC and DEEDI, Brisbane	DEEDI	2011	FCW	<ul style="list-style-type: none"> Housing demand forecasting and supply strategies
Urban and Land Development Authority, Queensland	ULDA	2012	FCW, WBB, MIW	<ul style="list-style-type: none"> Current and potential affordable land development schemes
OESR	OESR, QLD	2012	FCW, WBB, MIW	<ul style="list-style-type: none"> Rental Housing Vacancy Rate
Queensland Government, 2011, Gladstone Housing Quarterly Report – June 2012, Arrow Energy, Australia Pacific LNG, QGC and DEEDI, Brisbane	DEEDI	2012	FCW	<ul style="list-style-type: none"> Housing demand prediction, supply strategies and the housing market analysis.

Gap analysis

1. Housing remains a 'hot issue' in many resource-based regions, with anecdotal reports of extreme pressures on housing availability and affordability.
2. A number of research reports are already available which track the drivers and pressures on housing, yet policy development still appears to be slow in responding. Few studies have been done on the impacts of house prices on population increases.
3. There is a lack of integrated housing model for a long term forecast based on life cycle demographic characteristics and the resource boom cycle.

Theme 6: Public health

Synopsis

Public health aspects refer to physical and mental health of the regional population, including residents and employees of resource sector projects, and health/hospital infrastructure.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
Redefining regional planning: managing change, measuring growth (Abridged report for Isaac Regional Council)	KPMG Consultants	December 2011	FCW	<ul style="list-style-type: none"> Modelling of infrastructure and services in Isaac Regional Council have shown that health and emergency services provision is significantly undersupplied because of the combined impacts of resident and non-resident demand
Moranbah medical, Medical services in Moranbah and the impact of non-resident workers	Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia (http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm)	September 2011	MIW	<ul style="list-style-type: none"> In July 2009, Central Queensland had the higher doctor to patient ratio in Queensland (1: 1,824), and this shortage is being exacerbated by the influx of population related to the resources boom Records from this private practice have demonstrated an increase of non-resident patients (that is, those with home postcodes outside of the immediate local area). Almost one-quarter of the patients serviced in 2011 were non-resident, compared with 18% in 2007. This overburdening means the practice can no longer offer same-day service to the resident population
Autism Queensland, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	(http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm)	April 2012	All	<ul style="list-style-type: none"> Currently there is a shortage of professionals with relevant experience and expertise in the field of autism. Risk factors associated with delivery of Outreach Services. This can include extended hours of travel by road in rural areas where mobile coverage is poor, visits to the homes of clients in isolated areas, fatigue due to long days and long periods away from home and challenges finding suitable accommodation, particularly in mining areas where much of the accommodation is booked out months in advance.
Australian Services Union, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	May 2012	MIW	<ul style="list-style-type: none"> Nebo has medical facilities but no doctor. Moranbah currently does not have a dentist, the closest being Emerald or Mackay (both about 200 kilometres distant).

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Scarlet Alliance, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	(http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm)	October 2011	All	<ul style="list-style-type: none"> • There is a need for better health promotion approaches in FIFO/DIDO communities, and a need to address the misconceptions about reproductive health (e.g., incidence rates for STDs)
AYAC (Australian Youth Affairs Coalition), Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	(http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm)	March 2012	All	<ul style="list-style-type: none"> • One off interventions, check-ups and Tele/DIDO/FIFO do have a strong place in servicing remote and rural communities, but this should not be conducted at the expense of face to face services built on strong relationships, community partnership and trust, and ongoing sustainable services.
Queensland Nurses' Union, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	(http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm)	October 2011	MIW	<ul style="list-style-type: none"> • Focus on Belyando Shire (Moranbah) • The lack of a permanent workforce in mining communities restricts the expansion of, health, emergency and other critical services and puts added pressure on existing services. • Increase in alcohol related violence and substance abuse by non-resident workers, which strains the under-resourced health system • The Alcohol, Tobacco and Other Drugs (ATODS) Service has reported an increase in alcohol-related injury, and workplace referrals for employees who return a positive drug or alcohol test

Reference	Source / availability	Date	Relevant region(s)^	Key findings
National Rural Health Alliance, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	(http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm)	October 2011	All	<ul style="list-style-type: none"> • Fly-in fly-out or drive-in drive-out health services should not be seen as replacement for personalised, hands-on healthcare. • Major shortages exist in the rural and remote health workforce • Health staff that travel long distances to service FIFO communities face safety and OHS issues <p>NHRA recommends that:</p> <ul style="list-style-type: none"> • the full costs of providing outreach and locum services in rural and remote communities must be recognised in rural and remote health funding programs • Each Regional Development Australia committee have a health focus in its Strategic Plan • Medicare Locals should be encouraged and enabled (including through appropriate funding) to work with Local Hospital Networks and Regional Development Australia committees to ensure that health service planning is based on full population needs at local and regional level (including FIFO workers) • Further research is conducted on the physical and mental health of non-resident workers and their families
Regional sustainability: Developing service optimization model for the mining towns in Queensland – a case study of Moura	CEM, CQUniversity	2011	FCW	<ul style="list-style-type: none"> • In the mining towns, such as in Moura, There is a clear demand from residents to improve the GP and hospital services, and to introduce better dental, and pre and post natal services. This could alleviate some stresses in this mining community. • This study suggests an upgrade to Moura Hospital, with some additional services of dental, pre and post natal. If this is not economically feasible (as this study did not conduct a cost effectiveness study), then the Biloela Hospital can be upgraded with some additional services and beds and with adequate public transport facilities between Moura and Biloela may be sufficient. Current GP services need to be updated at any cost; as this is the most frequented service and many non-residents utilise this service. Local government, mining industries and the medical service provider should work together to ensure an adequate quality and quantity of general practitioners in Moura.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
On-ground programs				
None identified specific to cumulative impacts / resource sector				
Key data sources				
Medicare Local Offices / Regional Health Boards				
Queensland Council of Social Services				
Other projects				
Susan Kinnear, Zobaidul Kabir, Lisa Bricknell, Julie Mann, in preparation, Managing the cumulative impacts of resource development on public health: an Australian perspective, book chapter in Rodriguez-Morales (Editor), Current Topics in Public Health, InTech Publishing, ISBN 980-953-307-868-2	CQUniversity	Due for publication November 2012	ALL	<ul style="list-style-type: none"> Cumulative health impacts of resource development are emerging as a key challenge for public health practice in regional Australia The possibility for cumulative health impacts to be incorporated into existing social impact mitigation plans (SIMPs) will be explored, thereby allowing a combination of government, proponent and community-led responses to be brought to bear on this problem.

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

1. There appears to be a shortage of 'real' data on public health, with much of the information relating to public health pressures being anecdotal. However, there is the potential for data to be captured relatively easily, for example, by capturing postcode information from patients, or by conducting research that allows the experiences of regional health practitioners to be documented and analysed.
2. The cumulative health impacts of the resource sector include employee, resident and wider community risks.
3. Very few studies have been conducted on how this sector has been operating in terms of providing optimum level of services.

Theme 7: Workforce planning, skills and education

Synopsis

This thematic area will explore data and statistics relating to employment figures, job creation programs, skilling and training initiatives, and modelling of workforce requirements and demand specifically as they relate to the resources sector. It will also provide comment on the indirect and/or flow impacts on other sectors. In addition, education will refer to the number of childcare and kindergarten, primary, secondary, vocational and tertiary education establishments and programs within the region, as well as student numbers.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
J Descovich & H Norris, 2012, A Report of the Regional Engagement for the Central Queensland Resource Catchment Workforce Development Strategy, RDA, 172 pages	By request from RDA	2012	MIW; FCW	<ul style="list-style-type: none"> Catalogue of current and proposed workforce development initiatives in the region across all industry sectors Comments on future workforce requirements across all industry sectors by reviewing major projects and current and projected skills shortages
Leading Practice Principles for Attracting and Retaining Women in the Minerals and Energy Sector	Available QRC website http://www.qrc.org.au/01_cms/details.asp?ID=3014	March 2012	ALL	<ul style="list-style-type: none"> Sixth edition Reports that 11% of non-traditional roles (engineering, geology, trades) are now held by women The QRC target for 2020 is to increase this further to 20% Notes QRC's participation in the Australian Women in Resource Alliance (Australian funded initiative)
Regional Skills Audit, MWRDEC	On request from MWREDC	2010	MIW	<ul style="list-style-type: none"> This audit conducted because skilled labour shortages were identified as one of the key issues facing the MIW region Future needs analysis suggests 16,116 construction and 24,920 operational workers required Provides a list of top-20 occupations in demand across all sectors (combined) Skills requirements identified for key sectors Strategies identified for attraction/retention

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Wide Bay Burnett Resource Sector Opportunity Study	RDA Wide Bay Burnett	2011	WBB	<ul style="list-style-type: none"> The region has persistent high levels of unemployment and an historically low labour force participation rate The regional labour force is approximately 130,000 people Approximately 60,000 construction positions plus a further 30,000 full-time operational jobs once construction is completed, in the identified "Economic Zones of Opportunity" Flow-on impacts are additional to those figures There is a strong opportunity for Wide Bay Burnett regions to services the Surat Basin (DIDO), Gladstone (DIDO), and the Bowen and Galilee Basins (FIFO), but housing availability remains an issue.
Wide Bay Burnett Workforce Mobility Study	RDA Wide Bay Burnett	2013	WBB	<ul style="list-style-type: none"> identifies the key barriers and opportunities for this region's mobile workforce, and suggests recommendations for how these might be addressed. Establishing direct FIFO access from the WBB region to worksites was identified as a critically important
Wide Bay Burnett Workforce Development Jobs and Skills Matching Study	RDA Wide Bay Burnett	2013	WBB	<ul style="list-style-type: none"> Companion document to that listed above Involved an online survey to better understand the profile of job seekers within WBB and their work-readiness for resource sector positions Culminated in a series of recommendations focus on identifying and removing barriers for WBB jobseekers to enter the resource sector workforce
Peter Lugg, Dewen Liu, Rebecca Hill, 2008, Skills Shortage - Identification of Needs for Engineering Training in Longwalls, Research report for ACARP	Australian Coal Association Research Program (ACARP) at www.acarp.com.au	2008	All	<ul style="list-style-type: none"> Investigates the impacts of the skills shortage on the productivity of longwall faces. The scope is limited to the supervisors and crews that operate maintain and procure the longwall face equipment.
Makiela, S., Akbar, D. and Greer, L. (2008): Priority Country Area Program (PCAP) Funding Eligibility Model (Report prepared for Department of Education and Training, QLD). Queensland Department of Education and Training.	Centre for Environmental Management, CQUniversity and Queensland Department of Education and Training	2008	FCW, MIW,	<ul style="list-style-type: none"> Number and type of regional schools that deserve PCAP funding Number of students in those schools
Greer, L., Akbar, D. and Miles, R. (2009): Attracting and retaining specialists' teachers and non-teaching professionals in Queensland secondary schools. Queensland Department of Education and Training.	Centre for Environmental Management, CQUniversity and Queensland Department of Education and Training	2009	FCW, MIW,	<ul style="list-style-type: none"> Factors of attraction and retention of high school teachers in regional Queensland Teachers' characteristics

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Rolfe, J., R. Lawrence, D. Gregg, F. Morrish and G. Ivanova (2010) Minerals and Energy Resources Sector in Queensland Economic Impact Study, report prepared for the Queensland Resources Council, The Eidos Institute, Brisbane.	Centre for Environmental Management, CQUniversity and The Eidos Institute	2010	FCW, MIW, WBB	<ul style="list-style-type: none"> • Work force forecasting for the resources sector in Queensland
Akbar, D., Mann, J. and Kinnear, S., (2011), Workforce modelling and skills development In Queensland's clean coal and natural gas power generation sectors, Skill Development for a Low Carbon Economy, Report for Energy Skills Queensland, CEM, CQUniversity, Rockhampton.	Centre for Environmental Management, CQUniversity and Energy Skill Queensland	2011	FCW, MIW, WBB	<ul style="list-style-type: none"> • Workforce demand forecasting for clean coal and natural gas power generation sectors in Queensland • Construction and operation labour force for newly planned power generation across Queensland
Workforce Accommodation Arrangements in the Queensland Resources Sector	Queensland Resources Council	2012	FCW, MIW, WBB	<ul style="list-style-type: none"> • Current and projected workforce in the resource sectors across Queensland • FIFO/DIDO Workforce
Rolfe, J and Rose, A., 2012, Workforce and population forecasting for the Surat basin region, CEM, CQUniversity	Centre for Environmental Management, CQUniversity	2012	FCW	<ul style="list-style-type: none"> • Workforce and population forecasting for the Surat basin region
AusIMM Minerals Institute, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<p>Recommendations to:</p> <ul style="list-style-type: none"> • Support the development of affordable 24/7 childcare facilities and recreational facilities to support shift workers. • Remove fringe benefit tax on employer-provided childcare centres. • Allow 100% deductibility of the costs of childcare if both parents are in full-time • Employment in regional Australia.
Whitsunday Industrial Workforce Development, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	MIW	<ul style="list-style-type: none"> • the impact on communities sending large numbers of FIFO/DIDO workers to mine sites might include loss of skills from regional areas, and the need for specialised skills development and training in mobile employment

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Kinetic Group*, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia *Formerly, the Mining Industry Skills Centre	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	May 2012	All	<ul style="list-style-type: none"> Recruitment selection processes are the same for FIFO/DIDO as for regular employees – this leaves no ability to screen candidates specifically for their suitability for FIFO/DIDO work practices. People in regional communities have little or no chance to develop the skills required by mining companies to support career development in the resources sector. This could be addressed by using automation technology-assisted training (e.g. simulation/automation) to help develop a local workforce
Skills Australia, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> the extent to which the resources sector utilises the FIFO and DIDO workforce is not well documented Skills Australia recommended more data to be collected to define the extent of FIFO and DIDO workforce nationally on a regular basis
Dysart Community Action Association, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	January 2012	MIW	<ul style="list-style-type: none"> Flow-on impacts of extreme housing costs include loss of teachers at Dysart school, and 75 families leaving the primary/state high schools
Central Highlands Skills Needs Survey Analysis	Central Highlands Development Corporation (www.chdc.com.au)	August 2012	FCW	<ul style="list-style-type: none"> 83 businesses participated in the survey Lack of affordable accommodation is a key factor in attraction/retention for regional businesses Lack of support services is also key in attraction/retention, and this problem is outstripping the perceived 'lifestyle' benefits of the Central Highlands Most businesses expect ongoing business development and growth, but are uncertain about available service/assistance programs There are low rates of employing trainees & apprentices, due to both financial and bureaucratic reasons 93% of businesses seek trades, degree or certificate qualified staff Creative advertising is being used by some businesses, but incentives/assistance would be particularly welcome in this area

Reference	Source / availability	Date	Relevant region(s) [^]	Key findings
On-ground programs				
Application for Funding for a Fly In-Fly Out (FIFO) Coordinator	RDA Wide Bay Burnett		WBB	<ul style="list-style-type: none"> Position commencing October 2012
Clermont and District Education Group			FCW	<ul style="list-style-type: none"> In July 2012, received a \$10,000 financial grant from Isaac Regional Council to help local youth pursuing post-high school education, training and vocation goals.
Key data sources				
OESR	http://www.oesr.qld.gov.au/	2011		<ul style="list-style-type: none"> The Bowen and Galilee Basins Population Report, 2011 presents full-time equivalent population estimates and projections of the non-resident workforces (fly-in/fly-out, drive-in/drive-out) for these important resource regions. The supply and uptake of worker accommodation and place of residence of resource industry workers are also analysed. This information is based on OESR's annual surveys of resource companies and commercial accommodation providers.
		2012		<ul style="list-style-type: none"> The Queensland Regional Profiles product has expanded to include a new one-page summary 'Snapshot' feature. Users can create a Snapshot summary for their region of interest, presenting the latest available data on population estimates and projections, unemployment and the labour force, and building approvals.
ABS (Australian Bureau of Statistics)	www.abs.gov.au/ausstats	2012 2012	All All	6202.0 - Labour Force, Australia, May 2012 1301.0 - Year Book Australia, 2012 <ul style="list-style-type: none"> Chapter 2 Society-Labour Chapter 7 Population Chapter 12 Education and Training
Janet Phillips and Harriet Spinks, 2012, Skilled migration: temporary and permanent flows to Australia	Available online at http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/2011-2012/SkilledMigration		Non-specific	<ul style="list-style-type: none"> Overview of skilled migration history and reforms Recent policy changes to the skilled migration category highlight the relationship between immigration and the labour market needs of the Australian economy. Whether these reforms will have the desired effect of filling critical shortages in the Australian labour market (particularly in regional Australia) remains to be seen.

[^]MIW – Mackay Isaac Whitsunday; FCW – Fitzroy Central West; WBB – Wide Bay Burnett

Gap analysis

1. Workforce planning has received reasonable attention in recent years, with several commissioned reports.
2. However, there is still a need to understand specific occupational needs across different sectors; and to understand the role of specific subgroups in workforce planning (e.g. aged, disability, Indigenous).
3. The potential for shared skilling development (e.g. between mining and agriculture) could be explored
4. There is a need for whole-of-region solutions to workforce planning, based on a collaborative approach across stakeholders.

Theme 8: Transport and development infrastructure

Synopsis

This thematic area will be taken to include physical infrastructures such as transport development projects (road, rail, seaport and airport) and urban development projects related to the resources sector. Infrastructure for water and energy transmission considered under point nine. The thematic area also considers digitally-enabling infrastructure, since this is recognised as a key element in the development of regional communities.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
Baker, D., and Donnet, T., 2012 in press, Regional and remote airports under stress in Australia, Research in Transportation Business and Management XX:xx-xx	Journal homepage (subscribers only)	2012	All	<ul style="list-style-type: none"> • Focuses on governance issues for regional airports, with local governments often responsible for managing airports, despite not having the skills to do so. • Examines deregulation of regional airports • Notes that economic efficiency arguments for regional airports don't adequately reflect the range of social benefits that these facilities provide (e.g. as bases for medical and emergency services) • Lack of maintenance funding is a problem, particularly as high growth is being experienced in regional passenger numbers. • A Rapid response to market changes (e.g. FIFO) is needed
Whitsunday Regional Council. Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	January 2012	MIW	<ul style="list-style-type: none"> • Proserpine, Collinsville and Bowen airports experiencing high in-bound growth during the construction phase of mining operations • Infrastructure upgrades will also be required to cope with this growth • Air connections to other regional centres will also be required as this workforce transits to other construction sites (e.g. Alpha) • DIDO work practices has flow-on effects for road transport safety
Australian Services Union, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	May 2012	All	<ul style="list-style-type: none"> • Proserpine, Collinsville and Bowen airports experiencing high in-bound growth during the construction phase of mining operations • Infrastructure upgrades will also be required to cope with this growth • Air connections to other regional centres will also be required as this workforce transits to other construction sites (e.g. Alpha) • Aviation security is a key issue

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Regional Economic Development Corporation (REDC), The Mackay-Whitsunday-Isaac Freight Transport - Strategic Directions, Queensland, Australia (including companion technical report on economics of freight transport).	Website	2009	MIW	<ul style="list-style-type: none"> • Presents blue print for the freight transport network to facilitate and promote region's continued economic growth. • Put some strategic directions (Frigh efficient network, master planning) in response to the future demand.
REDC, 2010, Impacts of Growth-future requirements and Regional recommendations, Mackay and Whitsunday, Australia.	Website	2010	MIW	<ul style="list-style-type: none"> • Identified infrastructure requirements based on committed projects in the region as identified in the Regional Development Register, and Economic Baseline Audit (2008). • A number of projects will be implemented which will have impacts in terms of increasing population in the MIW regions, pressure on water and existing infrastructure. To address this pressure, more infrastructures are required such as road and rail construction, housing development.
Queensland Government, 2011, Wide Bay Regional Plan-Cultivating a strong, healthy and sustainable future for the Wide Bay Burnett, Australia.	Council Website	2011	Wide Bay Burnett	<ul style="list-style-type: none"> • Focus on the development directions and desired regional outcomes in term of sustainability and natural resource management in response to the future growth in the region. • Demand and construction of affordable housing and creation of construction services
Queensland Government, Roads Implementation Program; 2009-2014, Department of Transport and Main Roads.	Website	2009	MIW, WBB, FCW	<ul style="list-style-type: none"> • Provides key road construction projects under the Transport Infrastructure Development Scheme (TIDS) for the period (2009-2014) in order to manage the impacts of urban traffic growth.
Queensland Government, 2009, Northern Economic Triangle Infrastructure Plan 2007-2012: Progress Report 2009-2010, Department of Infrastructure and Planning, Queensland.	Website	2009	Mackay	<ul style="list-style-type: none"> • Listed a number of projects in water, energy and transport sectors under construction.
Whitsunday Regional Council and Department of Infrastructure and Planning, 2010, Bowen Abbot Point Accommodation and Community Infrastructure Study-Final Report.	Online	2010	W'sunday	<ul style="list-style-type: none"> • Determined accommodation and community infrastructure needs in order to address the areas of significant potential impacts • Identified gaps in current and future supply • Suggest potential solutions for future accommodation and community infrastructure issues

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Miles, RL and Kinnear, S., 2008, Sustainable Regional Development in Bowen Basin-A Strategic Issues Paper, CQUniversity Australia.	Online	2008		<ul style="list-style-type: none"> This report provides an extensive socioeconomic characterisation of the Bowen Basin and discusses the key challenges in the context of sustainability The ability of Australian coal producers to maintain Australia's position as a leading coal exporter and respond to the growth in global coal consumption is contingent on a number of factors. These include the timely and responsive development of new mines and supporting rail and port infrastructure, access to water resources and the availability of skilled human resources
Queensland Government, 2007, Wide Bay Burnett Integrated Transport Plan 2026- a Discussion Paper	Website	2007	Wide Bay Burnett	<ul style="list-style-type: none"> Identifies strengths and challenges in terms of transporting goods, people and services Proposed a list of actions/projects related to high ways, link roads, freights, ports and railways in order to meet the infrastructural development demand
Regional Development Australia, National Freight Strategy Discussion Paper	RDA (jointly between Townsville and North West Queensland; Mackay Isaac Whitsunday; and Fitzroy and Central West)	2011	MIW, FCW	<ul style="list-style-type: none"> Projected investment in resource developments in the region to 2015 in the order of \$107b The current freight network is restricting growth, and growth pressures are likely to be linked with increased potential for delays and failures The region is co-operatively developing a fifty year strategy for transport including freight across the entire region
John Rolfe, Rebecca Gowen, Susan Kinnear, Nicole Flint and Wilson Lui, 2011, Assessing the regional economic impacts of flood interruption to transport corridors in Rockhampton, CQUniversity and Capricorn Enterprise	CQUniversity or Capricorn Enterprise	2011	FCW	<ul style="list-style-type: none"> Examined the economic costs of transport corridor closures at Rockhampton, Central Queensland, as a consequence of peak flooding in the Fitzroy River during January 2011 The impacts of the transport corridor closures at Rockhampton in January 2011 cost the Rockhampton economy approximately \$35 million, and the wider Queensland economy a further \$45.7 million, for a total of \$80.7 million Direct impacts included lost coal production, lost agricultural production, damaged infrastructure and the emergency response and avoidance costs Indirect impacts included difficulties in moving workers to western mining sites during transport closures

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Australian Department of Infrastructure and Transport, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	FCW	<ul style="list-style-type: none"> • Airline data shows 33.1% growth in one-way services from Brisbane to Gladstone, and 34.3% growth for Brisbane to Emerald • However, the number of airlines servicing regional airports is in decline (at the national level)
CFMEU (Mining and Energy and Construction and General Divisions), Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> • The CFMEU recommends that the Government ensures that accommodation villages have access to modern digital technology so as to permit FIFO workers and their families to overcome the tyranny of distance and enhance their opportunities to communicate with each other, and that corporations that use FIFO are obliged to provide this technology • The CFMEU also recommends that the Government undertakes a study of the incidence of road accidents in the Bowen Basin with the objective of determining whether there is a correlation between the incidence of road accidents and "drive-in, drive out" and, if so, identifies the cause and make recommendations to overcome those causes
National Tourism Alliance (NTA), Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	October 2011	All	<ul style="list-style-type: none"> • FIFO arrangements distort aviation capacity and movements for non-mining areas • Flights are usually based around shift changes during the week, making it difficult to get seats that suit tourism operators around weekends • Prices for airline seats are increasing as the demand from the mining and related businesses increases. In addition, consequent airport pricing also pushes up prices overall as they try to deal with the logistics of crowding, passenger facilitation and parking
Queensland Resources Council	QRC online	November 2011	All	<ul style="list-style-type: none"> • Covers industry figure on capital expenditures and implications for transport infrastructure • Port and rail are the key areas to be impacted by further expansion
On-ground programs				
Mackay Regional Council, 2011, Tomorrow's Mackay- a vision for the community- Our Community Plan 2011-2031, Queensland, Australia.	Website	2011	Mackay	<ul style="list-style-type: none"> • Provides a vision of future infrastructure in Mackay region by 2031 • Identified priority infrastructure investment include delivery of water and treatment of, construction of necessary roads, bike ways and footpaths, public transport networks, rail, port and airport, drainage networks maximise the urban land

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Road implementation program in Wide Bay Burnett Region	www.dlqp.qld.gov.au/regional./wide-bay-burnett-regional-plan	2009-10 to 2013-14	WBB	<p>Major challenges facing the region include</p> <ul style="list-style-type: none"> • Supporting economic development by assisting freight movement • Maintaining and managing the ageing road network • Ensuring safe and efficient travel • Target the region of accident-prone areas
Major Projects Report 2012 in Queensland	Queensland major contractors association, www.gmca.com.au			<p>Key infrastructural projects in Mackay (Port projects):</p> <ul style="list-style-type: none"> • Abbott point T0, T2 and T3 coal terminals • Dalrymple Bay Coal Terminal • Hay Point Coal Terminal Stage 3 • Rail projects: <ul style="list-style-type: none"> • Alpha Coal Project (rail component) • BHP Billiton Goonyella to Abbot Point Rail Project • Carmichael Coal Mine and Rail Project • China First (Northern Export Facility) Project
Regional Development Australia, 2011, Regional Road Map V1.1-Wide Bay Burnett	Website			<ul style="list-style-type: none"> • The report offers action plan for critical infrastructure to support the growth of the region e.g. upgrade of the Bruce Highway, increased utilisation of the Port of Bundaberg, upgrade to regional road network, utilisation of existing rail network • The report proposed to develop required evidence based materials to support the proposals for further investment in regional infrastructure
Australian Department of Infrastructure and Transport, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	MIW	MIW	<ul style="list-style-type: none"> • Peak Downs Highway Safety Works, south west from Mackay – early planning stage only; involves a series of safety works aimed at assisting freight movements from mining regions as well as the DIDO workforce • \$120 million in Australian funding under the Regional Infrastructure Fund
Strengthening Aviation Security Initiative		All	All	<ul style="list-style-type: none"> • Funding of up to \$650,000 for a full suite of security equipment to all airports required to commence screening as a result of the Aviation White Paper (particularly in response to closed charter large aircraft for FIFO operations)

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Key data sources				
Queensland Resources Council, State of the Sector Report	QRC online at http://www.qrc.org.au/01_cms/details.asp?ID=3013	All	All	<ul style="list-style-type: none"> Economic and legislative trends, industry news, key indicators (e.g. production and value of production indices)
Infrastructure Australia	http://www.infrastructureaustralia.gov.au			
Australian Department of Infrastructure and Transport, Bureau of Infrastructure, Transport and Regional Economics (BITRE)		All		<ul style="list-style-type: none"> Economic analysis, research and statistics Aviation, maritime and rail transport data collections
Mackay-Isaac-Whitsunday Regional Development Register	Regional Economic Development Corporation Mackay and Whitsunday	MIW		<ul style="list-style-type: none"> Contains information on key developments in the Mackay Isaac Whitsunday region

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

Infrastructural development has been underway in all the regions (Mackay Isaac Whitsunday, Fitzroy and Central West and Wide Bay Burnett) in response to mining boom. However, some of the existing gaps include:

- A lack of information about disaster management (e.g. flood) related infrastructure.
- A lack of information about the integrated infrastructure planning and development across the regions and subregions. For example, this might include a new demand modelling study should be conducted for the Bruce Highway, including identifying the necessary steps to improve its current condition from Gympie to Cairns.
- Airports are a key issue, particularly due to growth in FIFO service requirements.
- Strategies to ensure safe and efficient travel. For example, to date, there have been no studies on non-motorised or 'active transport' systems within the local community, which should have a priority given the strong linkages with both human health and well-being outcomes.
- Next to nothing could be sourced about the cumulative, resource development-based impacts and drivers for ICT infrastructure.
- There is a lack of assessment of cumulative impacts. At the project level, EIA or SIA have limited scope to assess the cumulative impacts. As EIS assessments are generally constrained to the project level, there is a tendency to focus on the impacts of a particular project. Thus, the potential cumulative impacts from multiple projects within a region do not appear to be adequately considered. However, CQUniversity is currently in negotiations for a new research project on cumulative impacts of resource sector growth on regional transport systems.

Theme 9: Water and energy

Synopsis

This thematic area may deal with changes in supply/demand pressures, as well as the reliability and quality of supply through existing and planned regional infrastructure. Information on 'water' will be collated in regards to freshwater, estuarine/coastal and near shore marine environments (e.g. the Great Barrier Reef). Information on energy will include both renewable and non-renewable sources where available and relevant.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
Deloitte Access Economics, Queensland Resource Sector State Growth Outlook Study, prepared for the Queensland Resources Council, 87 pages	QRC online	November 2011	All	<ul style="list-style-type: none"> Covers industry figure on capital expenditures and implications for water and energy Electricity demand projected to grow at annual average of 4.3% per annum (to reach 13,278 MW in 2020/21) Most publicly announced major generation projects are not yet committed, or are early-stage Projections show that regional capacity for electricity is unlikely to meet expected demand by 2015/16, with the problem worsening to 2020/21 Central Queensland will require the largest volume of water, particularly between 2013-15, but water constraints are not expected if planned projects go ahead Flexibility in water allocations amongst resource projects will be useful in managing water efficiently
C Cote, C Moran, E Gozzard, A Craven, J Shih, 2009, Understanding Leading Practice in Water Management, ACARP research report	Australian Coal Association Research Program (ACARP) at www.acarp.com.au	2009	All	<p>The objectives of the project were to:</p> <ul style="list-style-type: none"> Extend the information base on leading practices to improve confidence that industry leaders have been identified; Explain leading practice indicators and communicate how they are being achieved; and Capture this knowledge in an on-line information system accessible to industry. A total of 26 mines have been included from three regions: North Bowen Basin, South Bowen Basin and Hunter & Southern Coalfield
Larelle Fabbro, L Unwin, LJ Barnett, L Young, N Orr, 2008, Mine Water Quality - Spread of Blue-Green Algae, ACARP research report	Australian Coal Association Research Program (ACARP) at www.acarp.com.au	2008	FCW, MIW	<ul style="list-style-type: none"> This project was undertaken to address improvement in water quality of pit and recycled mine waters in the Bowen Basin and included a detailed study of issues related to the toxicity and management of blue-green algae.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Clint McCullough, Mark Lund, Joel May, 2008, Treating Acidity in Coal Pit Lakes Using Sewage and Green Waste: Microcosm and Field Scale Trials at Collinsville Coal Project (Queensland), ACARP research report	Australian Coal Association Research Program (ACARP) at www.acarp.com.au	2008	MIW	<ul style="list-style-type: none"> Coal mine lakes represent a potentially valuable resource to both the environment and the community in inland Australia, if the water can be remediated to an appropriate standard for its proposed end use. This approach focused primarily on additions of organic material to support sulphate reducing bacteria (SRB) which convert sulphate back to sulphides, removing acidity and metals in the process.
Rolfe, J., Wake, J., Higham, W., Windle, J., and Trendell, P., 2008, Best management practice adoption in the sugar industry for improving water quality: The Mackay Whitsunday region, An initiative of the Consortium for Integrated Resource Management (CIRM), Queensland, Australia.	Website	2008	MIW	<ul style="list-style-type: none"> This report deals with the water quality issue that affect sugar production in Mackay and Whitsunday region. A number of water quality issues were identified including pollutant released by industries including mining. Nutrient loads are now several times greater than pre-European levels. In order to address the issues, this report offers a best management practice (BMP) that may improve the sugar productions. The BMP include irrigation, soil and chemical management.
Queensland Government, 2012, Mackay, Isaac and Whitsunday Regional Plan, Planning for resilient, vibrant and sustainable community, Queensland Australia.	Website	2012	MIW	<ul style="list-style-type: none"> Identifies principles, policy, and program for water bodies (water ways, wetland and estuaries) that are of high ecological importance. Proposes monitoring for water quality though the development of regional targets for water quality and waterway health.
Drewry, J., Higham, W., Rohde, K., and Masters, B., 2007, Water Quality Improvement Plan: Turning Environmental Values into Water Quality Objectives and Targets (draft technical report), Queensland, Australia Government.	Website	2007	MIW	<ul style="list-style-type: none"> The plan aims to improve long-term water quality in the region's freshwater catchments and estuaries. This report contains technical details on the development of the Water Quality Objectives, current condition and targets in the Mackay Whitsunday region for: <ul style="list-style-type: none"> o ambient freshwater o event-based end-of-catchment freshwater o marine event plume o the ambient marine environment

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Queensland Government, 2008, Mackay Whitsunday Healthy Waterways, Ambient Monitoring Program Regional, Australia.	Council Website	2008	MIW	<ul style="list-style-type: none"> • The Ambient Monitoring Program is a cooperative program between Australian, state and local governments, as well as volunteers within the local community • This report provides an overview of the ambient physico-chemical parameters which were sampled from various freshwater rivers, streams and creeks in the Mackay Whitsunday region. <p>The findings include:</p> <ul style="list-style-type: none"> • Relatively uniform water temperatures across the majority of sites and land uses. • Low dissolved oxygen (DO) concentrations were prevalent for the vast majority of sites, with DO concentrations outside Central Queensland Water Quality Guidelines on 50% of occasions. • Electrical conductivity (EC) varied among sites with high readings from various sites caused by groundwater influence or catchment geology. • pH values were within the Central Queensland water quality guideline range on 50% of occasions at each site. • Filterable reactive phosphorus (FRP) levels were higher in urban catchments or areas where point source pollution was an influence. • Water clarity was consistently good across all land use types where substantial groundcover was prevalent.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Galea, L., Pepplinkhouse, D., Loft, F and Folkers, A., 2008, Mackay Whitsunday Healthy Waterways, Baseline Monitoring Program Regional report, Queensland Government, Australia	http://www.derm.qld.gov.au/science/projects/mackaywhitsunday/index.html	2004 ongoing	MIW	<ul style="list-style-type: none"> • Aims to improve water quality in Mackay/ Whitsunday region • Identified a number of issues related to water pollution such as cultivation and land use for other purposes (e.g. housing). • Identified strategies of monitoring • Key findings of monitoring : <ul style="list-style-type: none"> • Relatively uniform ranges in water temperatures across the majority of sites and land uses. • Great variability between individual sites and land uses with regard to dissolved oxygen. • pH levels from all land-use categories were well within the central Queensland water quality range (6.5 – 8.0) on 50% of occasions, with the larger majority falling within guideline range on 80% of occasions. • Great variability with regards to electrical conductivity was evident between individual sites and land uses. • TSS was consistently low, with a collective median level of 4.8 mg/L from intensively cropped catchments. • Nutrient concentrations were higher at intensively cropped sites, particularly after substantial rainfall events.
Queensland Government, 2006, Mackay Whitsunday Regional Tourism Investment and Infrastructure Plan: 2006-2016.	Website	2006	Mackay W'sunday	<ul style="list-style-type: none"> • The aim of this plan is to improve the tourism in the region. • The lack of infrastructure led development resulting in infrastructure capacity (potable water, marine aquatic) problems in prime locations such as Airlie Beach. • Under this plan projects were proposed on including supply of potable water to the regions (the Burdekin Dam Pipeline Project and/or support for water recycling).
Queensland Government, 2009, Fitzroy Basin Draft Water Resource Plan- Socioeconomic Stage 1 Baseline Report, Australia.	Google	2009	Fitzroy Central West	<ul style="list-style-type: none"> • The provision of existing was critically reviewed against the findings of social and economic assessment report in order to develop a new plan. • Survey evidence suggests that permanent water trading, which was introduced through the Fitzroy WRP 1999, has worked well in the Fitzroy catchment in terms of participants selling surplus water allocations with ease. • Water trading, which allows low value water to move to high value industries, was enhanced by the high level of awareness of the participants about the mechanisms of water trading.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Queensland Government, 2011, Wide Bay Burnett Regional Plan-Cultivating a strong, healthy and sustainable future for the Wide Bay Burnett, Australia	Website	2011	Wide Bay Burnett	<ul style="list-style-type: none"> The Wide Bay Burnett Regional Plan (the regional plan) establishes a clear vision and direction for the region for the next 20 years. The purpose of the plan is to manage regional growth and change in the most sustainable way to protect and enhance quality of life in the region. The plan identifies principles, policies and programs related to regional water supply, total water cycle management, water quality, water health and wetlands.
Isaac Regional Council, 2011, Redefining Regional Planning: Managing Change, Measuring Growth (Abridged version), Queensland, Australia.	Website	2011	Isaac Region	<ul style="list-style-type: none"> This report identified the level of existing services and condition of natural resources. In response to increasing activities of mines in the region, the report then forecasted the demand of services in future including the pressure on water, environment and other resources using input-output modelling. The report anticipated how much additional demand for infrastructure and services within the region will be required.

On-ground programs

Healthy Waterways - Water Quality Monitoring Program	http://www.derm.qld.gov.au/science/projects/mackaywhitsunday/index.html	2003-Current	MIW	
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Key data sources

Department of Environment and Resource Management, Queensland				
Fitzroy Basin Association, Wide Bay Burnett NRM Group, Reef Catchments				

Other projects

None identified				
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^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

Infrastructural development has been underway in all the regions (Mackay Isaac Whitsunday, Fitzroy and Central West and Wide Bay Burnett) in response to mining boom. Some of the remaining gaps are:

- There is a lack of information about water supply and water infrastructure development directly related to mining activities while mining activities affects water in many ways.
- There is a lack of information about the integrated water resource management and development across the regions.

Theme 10: Environment and natural resource management

Synopsis

According to the EPBC Act (1999), environment refers to ecosystems and natural and physical resources. Furthermore, it notes that issues related to environment might therefore include include heritage values, and the qualities and characteristics of assets (e.g. conservation and biodiversity issues). For the purposes of this project, the focus will be on environmental management issues linked with exploration, development and/or operations of resources projects, and any flow-on impacts to the surrounding catchments and/or landscapes.

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Research and reporting				
"On the right track, progress on the streamlining and petroleum approvals projects"; Report of the Department of Employment, Economic Development and Innovation-Mines, ISBN 978-1-921368-60-8 (online), 36 pages.	DEEDI (now DSDIP)	October 2011	All	<ul style="list-style-type: none"> • Exploration permits for coal in Queensland have increased four-fold since 2008; and the rigour of environmental assessments around this growth is critical • Reforms to project assessment will begin in 2012, which will reduce the target timeframes for environmental impact statements from 26-32 month to instead be 17 months
Whitsunday Regional Council, Submission to the House of Representatives Standard Committee on Regional Australia, Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia	http://aphref.aph.gov.au/house/committee/ra/fifodido/subs.htm	February 2012	All	<ul style="list-style-type: none"> • WRC recommended that the Inquiry should consider reviewing the Environmental Impact Statement approvals process in Queensland, as the community currently finds this process tokenistic. • A possible adjustment to the EIS process could include a legislative requirement for Local Government to be involved in the EIS, prior to the community consultation phase
Queensland Government, 2011, Wide Bay Burnett Regional Plan-Cultivating a strong, healthy and sustainable future for the Wide Bay Burnett, Australia	Google	2011	Wide Bay Burnett	<ul style="list-style-type: none"> • The plan identified principles, policies and programs for biodiversity, coastal environment, air quality and noise, regional landscapes and green space network as part of environment (pp. 57-66) • The plan identifies desired regional outcomes in the area of environment and designed implementation strategies
Industry Working Group, 2010, Supporting Resource Sector Growth- Industry proposals for streamlining Queensland's Approval Process, Queensland, Australia.	Website	2010	Mackay	<ul style="list-style-type: none"> • In this report, a range of recommendations have been made with the aim of better integration of approvals processes between Australian and Queensland agencies, among the different state agencies themselves, and between the proponents, state agencies and the community

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Mackay Regional Council, 2010, Sandfly Creek Environmental Reserve Management Plan, Queensland, Australia.	Website	2010	MIW	<ul style="list-style-type: none"> • The intent of this plan is to provide cost-effective management options that will maintain the Reserve's significant environmental values into the future whilst providing for nature-based recreational and educational opportunities • Combined with appropriate interpretive signs, this management design provides for educational opportunities particularly related to 'Ecosystem Services' • The report recommends for management activities (10 recommendations) and also outlined implementation strategies to environmentally manage Sandfly Creek Environmental Reserve Management
Department of Environment and Resource Management, 2011, Establishing Environmental Values and Water Quality Objectives for the Waters of the Fitzroy Basin- Consultation summary and response to submission from public consultation, Queensland, Australia.	Council Website	2011	Fitzroy Central West	<p>This report summarises the consultation processes that the Department of Environment and Resource Management (DERM) undertook in developing environmental values (EVs) and water quality objectives (WQOs) for the waters of the Fitzroy Basin</p> <ul style="list-style-type: none"> • This report also details the key issues raised in submissions from the release of the draft Fitzroy water quality documents for public review from 15 December 2010 to 4 April 2011, and DERM's response to those issues
Fitzroy water quality projects Status Report – 6 April 2011	Website	2011	Fitzroy Central West	<ul style="list-style-type: none"> • This report provides some basic information about the status of current projects and outcomes of the projects • The reports also provide recommendations for further environmental protection of water
Dupavillon, J., Johnston, N., Stephens, J., Smith, P., McDonald, J., and Ukkola, L., 2011, Environmental Values for the Fitzroy: Community Consultation, Fitzroy Basin Association, Queensland, Australia.	Website	2011	Fitzroy	<ul style="list-style-type: none"> • Results of consultation with stakeholders about the environmental value of Fitzroy Basin indicate some concerns regarding the basin and its conservation • Participant feedback and suggestions were also provided by the report
Queensland Government, 2011, Developing Water Quality Guidelines for the Protection of the Freshwater Aquatic Ecosystems in the Fitzroy Basin (Phase-1). Department of Environment and Resource Management, Australia.	Google	2011	Fitzroy	<ul style="list-style-type: none"> • This report deals with the development of sub-regional water quality guidelines for freshwater riverine systems in the Fitzroy Basin. It lists the locally-derived guideline values at the moderately disturbed level of aquatic ecosystem protection in terms of management intent

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Queensland Government, 2012, Mackay, Isaac and Whitsunday Regional Plan- Planning for a resilient, vibrant and sustainable community. Australia.	Website	2012	MIW	<ul style="list-style-type: none"> • This report provides extensive policy and programs for the sustainability of the region in terms of land, water, urban, transport and community management. • In terms of environmental management, the report focuses on biodiversity, water quality, water way health and wetlands, coastal environment, air quality and noise. • The plan also identifies the principles and programs for the management of environmental resources for the next 20 years
Queensland Government, 2011, Mackay, Isaac and Whitsunday (MIW) Region Industrial Land Demand Study, Office of Coordinator General, Department of Employment, Economic Development and Innovation, Queensland, Australia.	2011	Website	MIW	<ul style="list-style-type: none"> • The report analysed the regional economy with specific consideration of economic activity in the Region that will influence the major industrial land and infrastructure • Identified the existing supply of industrial land in the region including an analysis of industrial land pricing and sales and industrial development • Assessed the demand of industrial land in the region and identify opportunities and competitive advantages for industrial development to meet the identified demand • Assessed the capability of existing industrial supply in the sub-regions to meet future economic growth
On-ground programs				
Key data sources				
Department of Environment and Resource Management, Queensland				
Fitzroy Basin Association, Wide Bay Burnett NRM Group, Reef Catchments				
Other projects				
"On the right track, progress on the streamlining and petroleum approvals projects"; Report of the Department of Employment, Economic Development and Innovation-Mines, ISBN 978-1-921368-60-8 (online), 36 pages.	DEEDI (now DSDIP)	October 2011	All	<ul style="list-style-type: none"> • Exploration permits for coal in Queensland have increased four-fold since 2008; and the rigour of environmental assessments around this growth is critical • Reforms to project assessment will begin in 2012, which will reduce the target timeframes for environmental impact statements from 26-32 month to instead be 17 months

Reference	Source / availability	Date	Relevant region(s)^	Key findings
Central Queensland Strategy for Sustainability 2004 and Beyond (CQSS2)	Fitzroy Basin Association	Updated 2005	FCW, MIW	<ul style="list-style-type: none"> • Sets goals and regional environmental targets across land, water, reefs, ecosystem health and cultural, social and economic assets • Also has notes on regional coordination, R&D, planning and decision-making

^MIW – Mackay Isaac Whitsunday; FCW – Fitzroy and Central West; WBB – Wide Bay Burnett

Gap analysis

The gaps related to environment and natural resource management include:

- a lack of information about environmental management directly related to mining activities while mining activities are affecting air, water, and land in these regions.
- a lack of information about the integrated environmental management across the regions.

Additional references

DEEWR, 2010, Resourcing the future, National Resources Sector Employment Taskforce Discussion Paper, March 2010, Commonwealth of Australia, ISBN 978-0-642-32942-4 (PDF).

Environment Protection and Biodiversity Conservation Act 1999 (Cwlth), Guidance Note 7, Definition of 'Environment' under section 528 of the EPBC Act.

Franks, DM, Brereton, D, Moran, CJ, Sarker, T and T, Cohen. 2010. Cumulative impacts – a good practice guide for the Australian Coal Mining Industry. Centre for Social Responsibility in Mining & Centre for Water in the Minerals Industry, Sustainable Minerals Institute, The University of Queensland. Australian Coal Association Research Program. Brisbane.





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