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GOVERNANCE STRATEGIES TO MANAGE AND MONITOR CUMULATIVE IMPACTS AT THE LOCAL AND REGIONAL LEVEL

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Centre for Social
Responsibility in Mining

ACARP Project C19025

*Governance Strategies to Manage and Monitor
Cumulative Impacts at the Local and Regional
Level*

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Disclaimer

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Introduction

This 18 month study commenced in October 2010. It examined the growing use of multi-stakeholder collaborative approaches for monitoring and managing cumulative impacts, focusing particularly on how these are being applied in the Bowen Basin to the management of water quality (Fitzroy Partnership for River Health) and dust issues (Moranbah Cumulative Impacts Group). The work undertaken by the CSRSM project team focused on:

- multi-stakeholder approaches for management of water and dust issues in the Bowen Basin; and
- governance issues and implications of using these structures and processes.

This project aims to enhance mining industry efforts to proactively address the management of cumulative environmental and socio-economic impacts at the community and regional scale and strengthen the capacity of the industry to engage with planners, regulators and others in multi-stakeholder processes for monitoring and managing such impacts associated with mining. Specifically, the results of this study will:

- equip the industry with details of considered and practical governance responses to address cumulative impacts; and
- position the industry to respond to regulatory and policy changes arising from the Queensland Government's Sustainable Resource Communities policy and the increased attention to the cumulative impacts of coal mining in the Bowen Basin.

The objectives of the work were twofold. First, to identify key considerations about governance arrangements required to support collaborative approaches for managing and monitoring cumulative impacts in the Bowen Basin. The second objective of this work was to formulate models and options with respect to multi-stakeholder action to address cumulative impacts.

Cumulative impacts of coal mining in the Bowen Basin

Australia is experiencing rapid development within its resource regions, with traditional mining sectors like coal expanding and new industries such as coal seam gas emerging. With such rapid expansion involving multiple actors and compounding activities, a range of complex environmental and socio-economic impacts are becoming increasingly apparent within Australian resource regions. Mining development has generated a range of positive cumulative impacts at the local and regional scale, such as local business development, employment and the provision of services and infrastructure, however, accompanying these benefits are potentially far-reaching impacts that are challenging traditional regulatory and management responses, including:

- increased airborne dust and pollutants, especially surrounding coal mines;
- effects on water quality from mine site discharge;
- amenity impacts, including visual amenity, noise, vibration and subsidence;
- housing and social service shortages as a result of population increase;

- land-use conflict, particularly in relation to high quality agricultural land and urban fringes;
- disproportionate inflation and the two-speed economy at local, regional and national levels; and
- loss of biodiversity and impacts on ecosystem services.

Each of these impacts is directly or indirectly linked to complex social or bio-physical receiving environments and each involves incremental and combined effects and complex feedback processes. Awareness of the aggregating and interacting impacts of extractive industries on the society, environment and economy of these regions is growing along with recognition that many cannot be adequately addressed by regulation or by individual companies working alone. Ensuring that the cumulative impacts of all stressors are kept within acceptable limits requires consideration of the combined, secondary and interacting impacts at a system level (Duinker and Greig 2007). Consequently other approaches – for example utilising market instruments or collaborative governance – are increasingly being used to address cumulative impacts such as those above within Australia, and indeed other countries' resource regions.

The science of monitoring and assessing cumulative impacts is advancing but too little is known about the institutional and capacity requirements to implement and sustain effective monitoring and management of cumulative impacts (Sheelanere et al 2013). This study focussed on collective approaches that involve the (often multiple) actors whose activities contribute to the cumulative impacts along with stakeholders from other sectors who may experience the impacts or have some responsibility for managing them. Such collective approaches to the management of cumulative impacts, involving not just mines and companies but government, community and other industries as well, are often regarded as having the potential to produce sustainable development outcomes. Indeed, in Queensland at least, there is official encouragement of collaboration with the generic Terms of Reference for an EIS issued by the Department of Environment and Resource Management (DERM) saying, "Where impacts from a project will not be felt in isolation to other sources of impact, it is recommended that the proponent develop consultative arrangements with other industries in the proposal's area" (Franks et al., 2010, 17).

The study has relevance to all regions of intensive coal-mining activity though it particularly relates to the coal-rich Bowen Basin, which is one of Queensland's major resource regions and the largest coal reserve in Australia. In total there are over 50 producing coal mines in the Bowen Basin, some of which are expanding and there are a number of new mines proposed. Three-quarters of these are open-cut operations and estimates of land disturbance in the Bowen Basin ranges between 55,000 ha and 80,000 ha (Chamberlain et al., 2007; FBA, 2008). There are numerous examples in the Bowen Basin of both source impacts (resulting from the 'extraction' or depletion of natural, social or human resources as operational inputs) and sink impacts (resulting from the addition of material to a receiving environment) (Franks et al., 2010). This study looked at a broad range of governance arrangements to manage and monitor both sink and source impacts of all forms of mining across Australia. It also undertook in-depth case studies of collective strategies for managing two different sink impacts of coal mining in the Bowen Basin.

Methodology

ACARP funded two precursor research projects on cumulative impacts undertaken by SMI: 'Assessing the Cumulative Impacts of Mining on Regional Communities: An exploratory study of coal mining in the Muswellbrook area of NSW' (C14047; Brereton et al., 2008), and 'Developing good practice in managing the cumulative impacts of coal mining' (C16036; Franks et al., 2010). This study extends this work to examine recent developments as government, industry and community stakeholders recognise that the traditional top-down, mine-by-mine approach is not well suited to dealing with such issues. Consequently it examines the growing use of multi-stakeholder collaborative approaches for monitoring and managing cumulative impacts, focusing particularly on how these are being applied to the management of water quality and dust issues in the Bowen Basin. The project complements the more technical work being undertaken in a related SMI project, 'Guidelines for Establishing Ecologically Sustainable Discharge Criteria in Seasonally Flowing Streams'.

To extend the observations about collaborative management made in the earlier projects, CSRSM adopted a multi-stranded approach to the current project (see Table 1). This consisted of:

- A review of relevant *academic* literature on management of cumulative impacts and on multi-stakeholder collaboration to identify models of multi-stakeholder approaches and the specific characteristics of cumulative impacts that might lend themselves to collaborative solutions or create specific contingencies governing effective collaboration to address CIs.
- A review of relevant practitioner and policy reports to determine characteristics of a range of multi-stakeholder groups dealing with some form of cumulative impact of industry (mainly mining and metals operations). This desktop research was supplemented by information from participants at a national 3-day workshop on *Understanding and Managing Cumulative Impacts in Resource Regions* (18-20th March, 2011, Brisbane) held by the project team that provided insights into the various reasons and purposes for collaborating, types of CIs being dealt with collectively, the range of processes involved and the categories of participants.
- In-depth study of two cases – both examining sink impacts in a fairly clearly defined receiving environment. The Moranbah Cumulative Impacts Group (MCIG) is responding to the impacts of dust on a local scale (the town of Moranbah), and the Fitzroy Partnership for River Health (FPRH) is an example of collective action with respect to saline mine water in a whole river basin (Fitzroy River catchment). Each involved attendance at some meetings of the relevant multi-stakeholder group, examination of meeting minutes, discussion papers and documentation as well as several interviews with key contacts. The case studies explored in more depth the common features and goals of collective approaches, as well as some of the obstacles confronted so as to understand the potential advantages and challenges of various options.

Table 1: Timeline: October 2010 – May 2012

	Oct-Dec 2010	Jan- Mar2011	Apr-Jun 2011	Jul-Sep 2011	Oct-Dec 2011	Jan-May 2012
Project	Monitors meet 1	CI workshop & interviews	Monitors meet 2		Monitors meet 3	Monitors meet 4
Lit Review						
Case Studies	MCIG meeting		FPRH meeting	MCIG meeting	MCIG meeting	2 x MCIG meetings

Results

Cases of collaboration to address cumulative impacts

We identified and analysed 30 examples of collaboration to address cumulative impacts related to the resources sector in Australia. The cases represented situations where there has been recognition that cumulative impacts are not single issues that can be addressed by the strategies of a lone operator. In each of the examples – which cover a range of cumulative impacts in various geographical locations, and at different stages in the mining and minerals processing life cycle or supply chain – collective action has been adopted to address the multiple and intertwined ripples and effects. A standardized classification and data organization method was developed for analysis of the cases (Table 2). All of the multi-stakeholder approaches were analysed according to the typology. The full data set is attached as Appendix 1.

As with impacts in general, there is an inexhaustible list of cumulative impacts and variations possible in the other dimensions we examined (purpose of collaboration, participants, processes). Although these categories are not mutually exclusive and not always conceptually clear, they enabled a more comprehensive and systematic analysis.

Details were collected on the case studies predominantly from public domain material (e.g. organisations' reports and websites). The data was supplemented by information obtained from interviews with key members of five of the case-study initiatives. The groups these participants represented varied in their makeup and purpose, ranging from local government committees to multi-industry partnerships. The interviews focused on collecting information regarding the challenges and successes experienced by these groups and the practitioners' recommendations for future similar initiatives. The case studies are all Australian based, with strong representation from Queensland, New South Wales, and Western Australia, three states that constitute the majority of extractive resource development.

Table 2: Typology of collaborative initiatives to address cumulative impacts

PARTICIPANTS
<p><i>Multi-sector:</i> across government, civil society and/or private sectors</p> <p><i>Multi-industry:</i> multiple industries (e.g. mining and agriculture)</p> <p><i>Inter-industry:</i> multiple companies within an industry</p> <p><i>Inter-governmental:</i> multiple government departments and/or multiple levels of government</p>
IMPACT TYPE
<p><i>Air quality</i></p> <p><i>Water quality</i></p> <p><i>Workforce and skills</i></p> <p><i>Biodiversity and rehabilitation</i></p> <p><i>Social infrastructure and services</i> (e.g. health, education and housing)</p> <p><i>Economic development and infrastructure</i></p>
PURPOSE OF COLLABORATION
<p><i>Communication:</i> provides a forum or network for communication and knowledge exchange between stakeholders or between stakeholders and the affected community members.</p> <p><i>Advocacy:</i> promotion and dissemination of information regarding a particular issue, which takes a particular stance.</p> <p><i>Planning:</i> preparation of a policy or plan.</p> <p><i>Program implementation:</i> joint resource contributions towards a specific initiative or program.</p> <p><i>Monitoring:</i> observing and recording the performance of a policy, project or plan.</p> <p><i>Advising:</i> providing pertinent information and recommendations to decision-makers.</p> <p><i>Industrial Synergy:</i> identifying and enacting linkages and joint use of resources and waste streams in an industrial setting. Also known as industrial ecology</p> <p><i>Management:</i> altering and coordinating activities to achieve consistency and a desired outcome.</p>
PROCESSES/ WAYS OF WORKING
<p><i>Networking:</i> exchanging information for mutual benefit</p> <p><i>Coordinating:</i> exchanging information and altering activities for a common purpose</p> <p><i>Cooperating:</i> exchanging information; altering activities; and sharing resources for mutual benefit and a common purpose</p> <p><i>Collaborating:</i> exchanging information; altering activities; sharing resources and risks; learning from each other; and enhancing each other's capacity for mutual benefit to achieve synergies beyond a common goal</p> <p><i>Integrating:</i> completely merging organizations with regard to operations and administrative structure</p>

The collective efforts were found to address a range of cumulative impacts (see Figure 1a). More than two-thirds were designed to address issues that are primarily environmental in their nature with air and water quality being prominent issues. Sixteen of the examples – such as – the Gladstone Region Social Infrastructure Plan – tackle social infrastructure, notably impacts on health, education and housing. In further cases, including the Gladstone Schools Engineering Skills Centre and the North-West Queensland Indigenous Resources Industry Initiative, economic infrastructure and impacts on workforce and skills are addressed. In thirteen of the cases the collaboration seeks to address multiple (often interconnected) impacts of either a single industry or of multiple industries such as a mix of both social and environmental cumulative impacts.

Over three-quarters of the collaborations involved stakeholders from different sectors of society (see Figure 1b). Depending on the scale and nature of the impact being addressed, those involved may represent individual industries and organisations or peak bodies in the sector. Hence the Queensland Partnership Group is an initiative of three peak bodies – the Queensland State Government, Queensland Resources Council and the Local Government Association of Queensland – while the associated Local Leadership Groups involve the mayors of affected councils, representatives of mining operations in the relevant resource region, and regionally-based State Government employees (among others). The multi-sector initiatives commonly incorporate parties that have previous or continuing adversarial or competitive relationships with a number of examples including multiple mining companies that compete in the market place and others such as the Fitzroy Partnership for River Health including farmers, mining companies and environmentalists – groups opposed on some issues.

Government bodies often play key leadership and support roles. Indeed, State Governments, as the regulators of the resources sector, are party to many of the collaborations as are representatives of the industries and developments creating the cumulative impacts. For instance, the NSW Office of Environment and Heritage has a central operational role in the Upper Hunter Air Quality Monitoring Network. Local government and civil society actors such as environmental non-government organisations or unions also participate in some cases. For example the Upper Hunter River Rehabilitation Initiative is implemented by a local catchment organisation, while the Moranbah Cumulative Impact Group involves union representatives.

Despite governments frequently playing key roles in these initiatives, few of the collaborations have direct decision-making powers, though some have an advisory role to government (see Figure 1c). For example, the Ravensthorpe-Hopetoun Coordination Group is charged with providing strategic direction and advice on infrastructure provision. Communication and the exchange of information and knowledge are an explicit aim of many of the cases reviewed (10) including the Bowen Basin Mining Communities Research Exchange. In at least some cases, including the Maranoa Joint Community Consultative Committee, these allow the expression of community concerns and information dissemination within local communities. An equal number of cases aimed to implement programmes, including the BHP Billiton Iron Ore MOU and the Pilbara Industries Community Council. Another common purpose is joint monitoring exercises, applying in cases such as the Upper Hunter Air Quality Monitoring Network and the Port Curtis Integrated Monitoring Program. Collaborative planning is also a reason to work with others in examples like Clermont Preferred Futures which brought together a mining company, local government and local business people to develop a longer term vision for the town including local economic diversification and reduced dependence on mining. In many cases, the groups come together with multiple purposes. For instance, initiatives such as TENBY10 have a secondary focus on advocacy, though we specifically excluded groups with advocacy and campaigning as their sole focus from this review.

In terms of governance the key features of the cases are:

- most adhere to a regular meeting schedule and adopted a committee or board structure;

- many have an independent chair to facilitate meetings and play a key leadership and mediation role;
- a number of initiatives also incorporate smaller sub-groups, committees, or working groups to address particular aspects of the task;
- websites and newsletters are commonly used to communicate either among collaborating partners or to keep the public updated and increase transparency;
- periodic workshops are used to extend the knowledge and skills of stakeholders, participants and the wider community;
- many of the cases were formalised through a memorandum of understanding or shared funding agreement, while others remained informal organisations, working groups or committees;
- constitutions, memoranda of understanding, terms of reference and codes of conduct are a common means of defining objectives and outlining commitments and agreed ways of working;
- funding was usually provided by industry and/or government participants - with costs split evenly in some cases, while others developed a formula for funding based on responsibility and contribution to the impact;
- there was a mix between paid and voluntary secretariat and functional positions;
- auspicing organisations played a key role in the establishment, and continued function of many groups.

The different initiatives were found to be located in varying positions along the collaboration continuum (Himmelman, 2001) (see Figure 1d). Most groups had moved beyond the foundation level of networking. The most common form of working together was 'cooperation' (43 percent). For instance the Fitzroy Partnership for River Health involved the sharing of waterway monitoring resources and information, and altering activities on the basis of that increased knowledge. This was followed by coordinating, which involved participants, in initiatives like the Moranbah Cumulative Impacts Group, sharing vital information and changing their behaviour accordingly (though not pooling financial resources). The Gladstone Industry Leadership Group was among the 10 percent of initiatives found to have advanced as far as 'collaboration'. They exchange information, alter activities, share significant resources and enhance each other's capacity for mutual benefit and to achieve synergies and common goals for the businesses and community. Likewise integration (completely merging organisations in regards to operations and administrative structure) was only evident in a couple of cases. This is likely because integration is not a necessary or realistic objective to address many of issues but also because of the challenges associated with trust and relationship building, and the fact that networking and coordination would be expected to be the predominant modes of interaction during the early 'stages' of collaboration (Himmelman 2001; Franks et al., 2010).

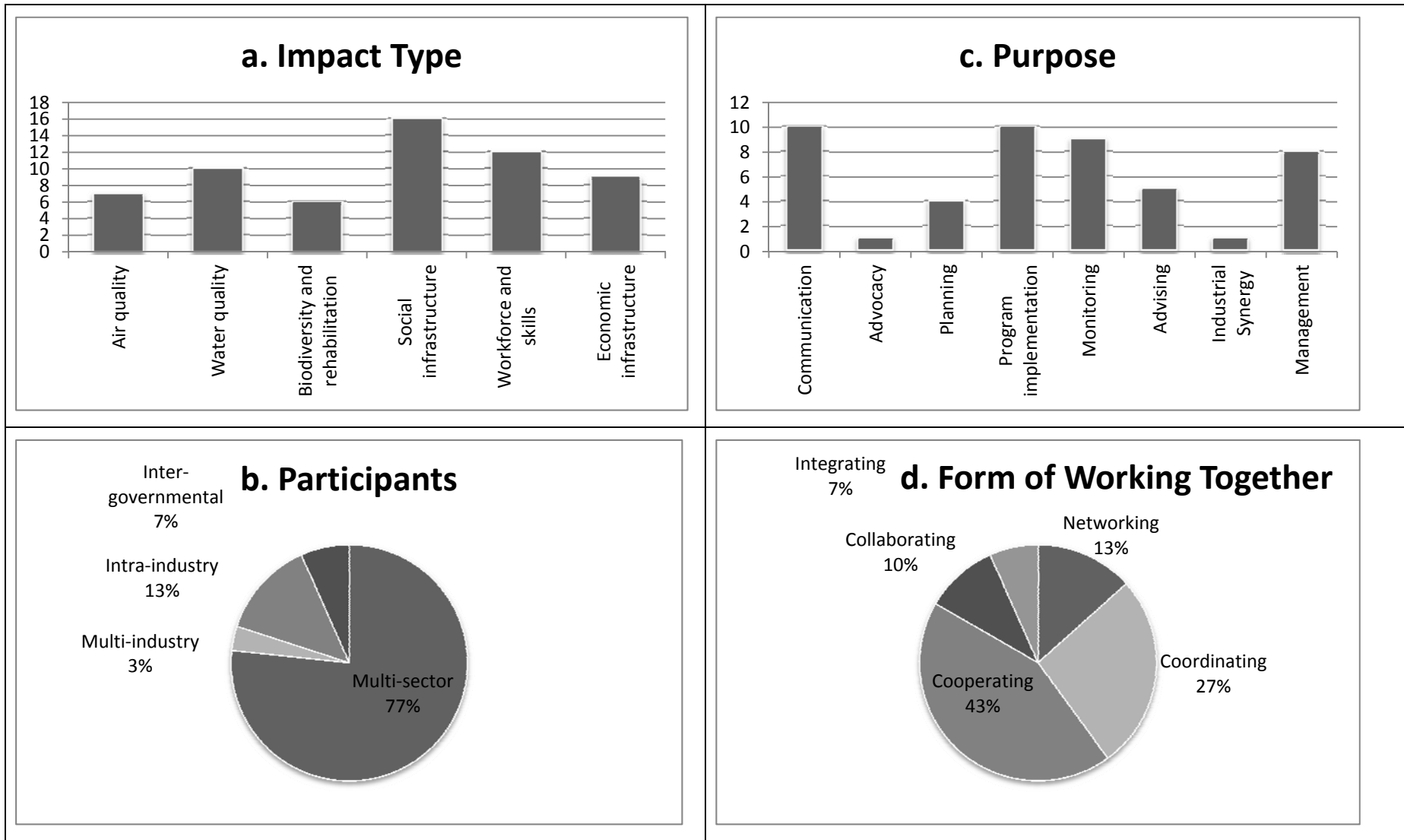


Figure 1: Distribution of cases according to typology

In depth case study: Moranbah Cumulative Impacts Group

Moranbah Context and Cumulative Impacts

Moranbah is the administrative hub of the Isaac Regional Council. The town was built in 1969 to service the Goonyella and Peak Downs mines, now owned and operated by BMA. There are now seven mining companies with operations or proposed projects in the vicinity of Moranbah: BMA, Xstrata, Peabody, Anglo-American, Wesfarmers, Vale and Macarthur Coal, and the town has more than a dozen coal mines (open cut and underground) within a 40 km radius and a further 10 projects in close proximity – most of them in advanced stages. These mining operations with most potential impact are located on three sides of Moranbah. There are open cut operations to the north (Goonyella/Riverside), to the south (Peak Downs); and, most concerning given prevailing wind directions in the dry spring months, to the east (Isaac Plains, Poitrel, Millennium, and the Daunia project). Additionally, approval for an extension of the Isaac Plains open cut mine has recently been given and for the new operation at Caval Ridge with other major new project proposals in the vicinity of Moranbah likely.

Dust is a recognised cumulative impact in areas of intensive coal mining activity (Brereton et al., 2008) and has been the subject of considerable scrutiny in other areas of intensive coal-mining activity notably the Hunter Valley in NSW.

Dust management strategies

For coal mining operations in the vicinity of settled areas, the Queensland Government (Department of Environment and Heritage Protection or Co-ordinator General) imposes conditions with respect to air quality monitoring, dust and water management, as well as issues such as groundwater monitoring, noise and vibration, spoil disposal, rehabilitation, community liaison, road and infrastructure upgrades and vegetation offsets. Best practice management of dust emissions requires an assessment of the impact of mining activities on dust levels in the surrounding environment and the effectiveness of the controls that may be applied and hence requires suitable dust-monitoring data.

Dust-monitoring programs are designed to provide quantitative information on ambient dust levels. Dust levels in the air are commonly measured in two ways:

- Concentration – the weight (in micrograms) of dust in one cubic metre of air ($\mu\text{g}/\text{m}^3$) (total suspended particles (TSP), PM10 and PM2.5 are all measured in this manner – PM10 and PM 2.5 refer to the size of the dust fraction). The most commonly used instruments for this are the high-volume sampler (hi-vol) and the tapered element oscillating microbalance (TEOM™).
- Dust deposition rate – the weight (in grams) of dust falling on one square metre over time, usually expressed as $\text{g}/\text{m}^2/\text{month}$. This involves collecting dust within a funnel and bottle.

The coal mines near Moranbah use a combination of these methods to analyse the air-quality impacts of their operations. However, until recently the monitors were located on site boundaries rather than within the receiving environment of concern (i.e. the town) and stakeholders outside the operator and regulator had little or no knowledge of the systems operating or the measures

recorded. The system was uncoordinated, lacked transparency and was not adapted to the compounding and cumulative situation with respect to dust emissions from multiple operations.

Further, a number of other land uses, such as land development, quarrying, agriculture and coal seam gas development are known to contribute to the generation of dust. Coal mines in the vicinity of Moranbah have developed management strategies to prevent or minimise dust generation. This can involve avoiding certain coal mining activities or restricting such activities to certain areas, certain times or specified conditions (for example blasting). Of course not all dust creation activities can be avoided or restricted at all times and therefore an efficient dust management system requires management controls to be integrated with technical controls - that can adopt three different techniques: containment, suppression and collection (Department of Environment, Climate Change and Water NSW, NSW Department of Planning and Industry, and Investment NSW 2010).

Again, there is limited knowledge within the community of the strategies employed by various operations and no confidence that such strategies are based on sound monitoring information (for example by using real-time data and weather forecasting). Nor is information available to demonstrate the effectiveness of the mitigation measures implemented or assure residents about regular reviews of dust monitoring information and management procedures.

The collective response (Moranbah Cumulative Impacts Group):

Given the limitations of the situation outlined above, and increasing community disquiet about the nuisance and amenity impacts as well as concerns about possible health impacts of dust given projected industry expansion, Isaac Regional Council (IRC) convened a community workshop in 2009 which was facilitated by CSRМ and attended by stakeholders from mining companies, the community and State and local government. The outcome was the formation of the Moranbah Cumulative Impacts Group (MCIG), which later chose to operate as a sub-committee of IRC. Table 2 provides characteristics of the MCIG. Mining industry participation was sought from those operations considered to have the greatest contribution to the generation of dust in the town of Moranbah.

Table 3: Characteristics of Moranbah Cumulative Impacts Group (MCIG)

Participants	Receiving environment	Purpose	Structure	Processes
<p>Multi-sector: 3 Qld Government departments (DERM, DEEDI, DIP), 2 Isaac Regional Council reps, 4 Coal company reps, 2 Union reps, 3-5 Community reps</p>	<p>Airshed: Health and amenity of Local Community</p>	<p>Communication and Monitoring: To improve the monitoring and public reporting of cumulative impacts on the town; in particular, dust generated from multiple mining, and also agriculture, construction, land development and other industrial activities around the town to ensure the quality of life and health of the community.</p>	<p>Initially a sub-committee of Isaac Regional Council (local government), now an independent association Operating under a Terms of Reference</p>	<p>Networking: A council initiated group that first met in November 2009. Holds quarterly meetings. Members liaise with their constituencies. Must solicit funding for any projects from participants or other sources.</p>

The MCIG met three times during 2010 and discussed the composition of the group, their terms of reference (which specify the group objective as: informing and protecting the community and industry from the negative impacts of dust, noise and other amenity concerns), and some proposed actions. However, in the absence of an independent chair, trusting relationships between the stakeholder groups involved, and clear shared purpose, the group foundered with a hiatus in what were intended to be quarterly meetings during the first half of 2011.

As with many collaborative groups, members of the MCIG have been keen to see action to address the dust. However the actions proposed to date reveal some challenges in establishing multi-sector collaboration. First, most stakeholders had a dearth of information (about the situation in their own community and elsewhere, the problems that might be posed by dust and the options available for measuring and managing the impacts of coal dust). Hence there were proposals to provide learning opportunities such as for the committee to undertake an industry-funded study tour to the Hunter Valley and to appoint an independent expert. However the rationale for the trip and the role of the expert were rather vague and it was unclear whether these proposals were intended to facilitate a learning process within the group, to develop shared understanding of the 'science' and the options, to 'adjudicate' the value of the data and options available, to research and formulate options to present to the group, or to give non-industry people confidence in understanding information from various sources. This showed the importance of communication and a shared knowledge base as well as the value of confidence among group members in available sources of information.

In early 2011 participants of the MCIG again approached CSRM to facilitate a visioning process to provide direction for the group and bed down key governance arrangements. The CSRM team participated in the following 4 quarterly meetings.

Key activities undertaken during this time are as follows:

- 1) A visioning exercise to establish: what has worked well about MCIG; what would work better; what is important to the group; in what direction would the group like to head; and importantly, how would the group need to be set up to achieve their aspirations?
- 2) A dust-roundup instituted as part of the regular agenda for meetings whereby mining company, government, community and council participants would present updates related to dust management. Updates included information on the activities undertaken to monitor dust, the instruments used to measure and the data from these instruments, whether complaints had been made, the community pulse on the issue etc. The information sharing from these activities has enabled the generation of a map of dust monitor locations with key details on the type of monitoring undertaken; community feedback through media releases following each meeting; data from key dust monitors to be made available online and to the public; and a greater understanding of dust generation, its management and regulation. A protocol for future dust-roundups has been developed with the goal to compile the information for use on a dedicated website that would act as a data hub and provide context for the issue and the monitoring currently undertaken.
- 3) Invited presentations as a regular feature of MCIG meetings. Presenters have included an independent dust management professional who was invited to speak to the group on dust management options adopted in other Australian resource regions and the QR National

programme officer for the coal loss management project (veneering). Mine site visits of dust monitors were also provided to interested participants.

- 4) Review of the purpose and governance of other multi-stakeholder collaborations in the mining sector in Australia to benchmark MCIG and consider the most appropriate arrangements for the group; and the facilitation of a process to adopt revised terms of reference, seek funding commitments, establish operating rules and meeting processes, consider a future program of work, and employ an independent chair and program officer to drive the next phase of the MCIG.

At the time of writing the revised terms of reference have been adopted; funds have been committed by key partners (split evenly between the IRC and 3 key mining operations – represented by 4 companies) and a process established for formalisation of these arrangements; committees have been established for the employment of an independent chair and program officer after potential candidates were prioritised by the group; a position description for the program officer has been developed; and a robust minute taking and meeting schedule have been established. MCIG aims to relaunch the group at the beginning of the 2012-13 financial year. The initial focus of MCIG will be to better understand the problem and the management options available and the provision of information to community. The group has attempted to outreach to other generators of dust, including the local quarry and CSG operators.

During this time the Queensland government also committed to situate a temporary dust monitor (for a period of 12 months) in the town of Moranbah to provide an additional source of information independent of the mining industry. This is the first time that the Queensland government had done so in Moranbah and according to key government informants this decision was made due to the presence of MCIG and the proactive steps it had taken to progress understanding and management of the issue.

Networks such as the MCIG offer the opportunity to improve cross-company or cross-sector communication, but groundwork is needed before that sharing of information leads to mutual benefit. One important strategy, as the group was advised is to, “Pick your umpire early and agree the rules of the game – whose ‘measures’ will you believe and what thresholds are acceptable”. The case reveals that the nitty gritty of how the group is established, what it will work on and by what means are key aspects that require prioritised thought and attention. Facilitation by a trusted party that is inter-dependent on the other participants within the collaboration and familiar with the issues at hand is well placed to progress collaborations through the establishment phase.

In depth case study: Fitzroy Partnership for River Health

Fitzroy Basin Context and Cumulative Impacts

Central Queensland's Fitzroy River Basin drains an area of 142,500 km² and is the largest catchment area in Australia after the Murray Darling (Hart 2008). The six major rivers and associated streams are a critical source of domestic water supplies and water for agriculture, mining and other industries. The annual water flows in the Fitzroy system are highly variable but average around 5000 gegalitres. The Australian Bureau of Statistics reports that in 2008-2009 the mining industry accounted for 4% of water consumption in Queensland compared to 64% by the agriculture industry (ABS, 2010a,b). However, the proportion of water consumption by the mining industry in the Fitzroy Basin is likely to be significantly higher. As well, this complex system is a valued aesthetic and recreational asset that serves valuable ecosystem functions not only for aquatic life and the riverine environment but also for the off-shore Great Barrier Reef. The impact of mining in the catchment is not so much from the extraction of water, but from the addition of saline discharge to the system.

Large-scale mining in the Fitzroy River Basin is dominated by coal mining operations in the Bowen Basin coalfields that overlap much of the catchment. These operations, especially open cut mines disturb areas of highly saline soils and subterranean deposits, and can potentially release large volumes of water into the catchment during high rainfall periods (Chamberlain et al. 2007). The primary contaminant of this water of concern to the communities and other industries of the Fitzroy Basin is salt. Mining companies are permitted to discharge water under conditions specified in Environmental Authorities issued under the Environmental Protection Act 1994 by the Department of Environment and Resource Management (Department of Environment and Resource Management 2009). Additional saline water is produced by coal seam gas developments.

This is a classic cumulative impact situation in that the issue of salinity in the catchment as a result of mining is:

- a consequence of the aggregation and interaction of multiple activities across time and space;
- relevant to many stakeholders with conflicting priorities and values;
- inter-connected and tangled with other problems (e.g. farming practices, drought, floods and other climate conditions, etc);
- volatile, dynamic and hard to predict and model;
- ambiguous and ill-defined with available data about it being uncertain and incomplete;
- a complex and multi-dimensional issue requiring a systems approach.

Public attention to the cumulative impacts of coal mining on catchment health escalated with the flooding of open cut mines in recent years, and their subsequent dewatering by discharging into waterways under Transitional Environmental Programs (TEPs). For instance, discharges from a flooded mine site in 2008, resulted in elevated salinity in waterways, dams, barrages and weirs and also impacted the domestic water supply for some townships. A public health alert was issued for some regional towns, and there were also concerns about impacts on stock watering and power generation. Consequently, the state government commissioned an independent review and some targeted studies.

Water quality management strategies

Almost all mines have Environmental Authorities permitting discharges under certain conditions the most pertinent of which relates to electrical conductivity (EC) measures (which indicate salinity) although there are some which also specify associated stream flow conditions. The EC limits imposed are usually based on a combination of measures both at the discharge point and in the receiving environment. There is considerable variability in the limits applied. Changes to the conditions in 2009 were intended to address some of the limitations of measures in use and reduce the variations from mine to mine to ensure more standard conditions (See Table 4 below). However conditions are still imposed on a site-by-site basis and there remain a number of technical challenges and shortcomings with the quality of indicators associated with monitoring (Department of Environment and Resource Management 2009). The conditions imposed in 2009 also resulted in an inability for mine sites at the top of the catchment to discharge saline water in the lead up to the 2010-11 flood events. In late 2011 – early 2012 DERM and the Queensland Resources Council negotiated updated model water conditions for coal mines in the Fitzroy Basin (Table 3).

To effectively address cumulative environmental impacts in this situation requires access to appropriate monitoring information about risks, ecological conditions, and management actions and options. The relevant information in the Fitzroy Catchment is distributed across a range of public, private and civic institutions.

Table 4: Discharge conditions of mine Environmental Authorities

To 2009	After 2009	From 2012
Release at any time – even no flow	Release only into stream flow (1 m ³ /s to 10 m ³ /s) and release less than 20% of stream flow	Graduated criteria developed for No/Low, Medium and High flow conditions
pH - 5.0 to 9.0	pH - 5.0 to 9.0	pH – 6.5-9.0
EC - up to 4000 uS/cm	EC - up to 2500 uS/cm (some at 1000)	EC release limits set dependent on flow condition
Not necessarily at nominated release points. Monitoring of releases downstream - project boundary	Release points nominated in the receiving environment (both upstream and up to 5-15 km downstream)	Release points nominated in the receiving environment on a case-by case basis.
	Must accord with water management plan prepared by operation according to DERM model	Development of a Receiving Environment Monitoring Program (data can be generated by Fitzroy Partnership).

In most cases mines are required, under their licensing conditions, to install and operate monitors. These compliance-related monitors constitute around 65% of those operating in the Bowen Basin. In addition, monitoring data for the catchment is collected by other organisations including government and research institutions. In total there are more than 26 independent monitoring programs currently collecting data at over 450 sites across the Bowen Basin (Fitzroy Partnership for River Health 2011). These operate in an uncoordinated fashion with the result that gaps, duplication and redundancies have been identified. For instance, about 40 sites have been identified where adjacent monitoring points (often operated by neighbouring mines) are potentially redundant. The cost of operating these sites is estimated at \$20-\$50,000 per site per year. While these monitoring

arrangements satisfy regulatory requirement, and generate considerable volumes of data, there is no mechanism to collate and assess this information so as to understand and address cumulative impacts.

The various studies undertaken after the 2008 flood events identified some of these shortcomings of the prevailing regulatory management strategies –

[T]he limits set are based on limited knowledge of ambient water quality conditions, are developed on a case by case basis and are subject to intensive negotiations with the mining companies. As a result, the conditions set in environmental authorities do not always reflect best practice for water quality management nor consider the potential cumulative impacts of several mines in the one catchment (Department of Environment and Resource Management 2009: 5).

Given that the flood events in 2008 and subsequent years indicated that the actions of individual companies and the established system of regulation and monitoring did not adequately manage cumulative impacts, a new approach was called for and hence a key recommendation was for, "...a catchment management plan and a coordinated monitoring and assessment program for the Fitzroy catchment" (Hart 2008).

The prevailing fragmented monitoring strategies and regulations operate alongside an integrated catchment management system undertaken by a collaborative, community-based body (the Fitzroy Basin Association, FBA). This group has produced the Central Queensland Sustainability Strategy (Christensen and Rodgers, 2006) and is a recognised Catchment Management Authority delivering major programs of the joint federal and state governments for regional natural resource management: the Natural Heritage Trust 2 (NHT2), the National Action Plan for Salinity and Water Quality (NAPSWQ) and, more recently Caring for Our Country.

As well, from early 2010 the Queensland Government's Department of Environment and Resource Management has been working in partnership with other Queensland Government agencies, local government, the Commonwealth Government and community and industry organisations to implement numerous projects designed to advance integration of government and non-government monitoring activities in priority regions, as well as address state-wide issues such as information management and reporting.

Although these established activities did not engage extensively with the mining industry, any collective action on cumulative impacts in the Fitzroy Basin needed to be consistent with this Integrated Waterways Monitoring Framework, with the Central Queensland Sustainability Strategy and other regional plans and with national natural resource management policies. For these and other reasons the FBA was funded by the Queensland Government to auspice a collaborative, partnership approach to improving knowledge across the system about the aggregate and interacting (cumulative) impacts of mining and agriculture on the river catchment by developing an integrated monitoring system based on existing programs and establishing a catchment-scale assessment and reporting process.

In 2009 FBA commenced discussions with key stakeholders about a waterway monitoring partnership. A working group was established that met seven times over the ensuing two years. The

number of interested parties rose steadily, and 26 partners formally committed resources at the launch of the Partnership early in 2012.

The collaborative approach (Fitzroy Partnership for River Health)

The Fitzroy Partnership for River Health (FPRH) will be a collaborative monitoring and reporting program involving over 20 partners. The technical solutions, in the form of a rigorous monitoring program, have been one valuable output but this is not sufficient in itself to manage the cumulative impacts in the catchment effectively. Over the two year establishment period the strategic working group focussed on building relationships and trust among prospective partners many of whom are not used to working together but who have succeeded in putting aside differences and “laying down arms” for a common cause. Moving beyond ‘in-principle’ commitments to formal commitments (signing the MoU, agreeing a financial contributions formula, partnership arrangements, final monitoring program and future communications activities) has been a sensitive process, with predictable reluctance to be ‘first mover’. Funds for the development phase of the Partnership were provided by the Queensland Government, and administered by the FBA with interested parties making in-kind contributions of their time and travel expenses. Agreed cost-sharing arrangements beyond the development phase took much longer to negotiate and were eventually based on each partners’ regulatory monitoring conditions. In all, the partnership took a full two years to establish and rose from 16 interested participants to 26 by the formal launch. Only at the seventh meeting did participating organisations achieve key milestones in formally committing to:

- a Memorandum of Understanding;
- operating rules;
- a project plan (for the first 18 months); and
- cost sharing arrangements.

Implementation began in 2012, with the aim of preparing the first catchment water quality ‘report card’ within 18 months. This will provide an assessment of the condition of the catchment; identify threats; and report on management responses. Throughout this establishment phase it was essential to be flexible and build ownership (sometimes by adapting the ‘scientific’ solutions). Both the FBA and the Queensland Resources Council worked in collaboration with stakeholders to provide leadership.

The planned riverine monitoring will measure salinity (electrical conductivity), ionic composition, sediment (turbidity), nutrients (nitrate, ammonia and phosphorous), metals, and weeds and pests (in-stream and riparian).

With its focus on multi-sector monitoring and coordination, FPRH is a way to advance understanding of the links between the biophysical, social and economic aspects of catchment management and to achieve consistent data collection and monitoring to underpin time series reporting of the catchment condition that, in turn can inform the effectiveness of NRM investment strategies and company strategies for managing their contributions to cumulative impacts. To this end, public reporting and trust building (both within the Partnership and with the wider community) is a key outcome. Another important outcome is better regional information to support management by mining companies but also across other sectors. In the long term, improved monitoring information may strengthen license conditions to make them more effective (and potentially less inefficient).

Table 5: Fitzroy Partnership for River Health (FPRH)

Participants	Receiving environment	Purpose	Structure	Processes
<p>Multi-sector: 26 Organisations including: Resource Companies, the four affected local councils, FBA (Regional NRM group and host organisation), AgForce (and other rural industry peak bodies), Qld DERM, Great Barrier Reef Marine Park Authority and Central Queensland University</p>	<p>Fitzroy River Catchment and coastal environment: Regional Environment (freshwater, groundwater, estuarine and marine ecosystems), Regional Communities (recreation, health, livelihoods)</p>	<p>Monitoring and coordination: To collaboratively develop and implement integrated waterway monitoring and reporting for the Fitzroy River Basin</p>	<p>Initially a Strategic Working Group hosted by FBA, to develop an MOU, operating rules and act as Secretariat. Formally established in 2012 with a Management Committee to represent the Partners Network. A Science Panel provides advice</p>	<p>Cooperation: Partners' network meets bi-annually to endorse and provide strategic feedback to the Management Committee. Secretariat gives operational support and administers all partnership committees including the Science Panel</p>

Common themes of successful models

Where the lines of responsibility are blurred, no sector has all the resources and competencies to manage the complex interaction of factors and there is an imperative in terms of a crisis in public opinion (social license) and/ or regulatory intervention, a collaborative approach appears the most constructive way to address issues (Selsky and Parker 2005). However, given the time requirements, the necessity for seed funding to support the establishment phase, and the need for overlapping and complementary competencies and resources, collaborative arrangements are not appropriate responses in all situations. They are an effective response under certain conditions and with sufficient resources particularly time and money.

The features of successful models are that they:

- provide opportunities for learning, reflexivity, innovation (and 'playing the devil's advocate), which is the basis of adaptive management;
- include consideration of perceptions and values as well as 'hard data';
- progressively build on trust and relationships and team-working processes;
- are multidisciplinary and tap diverse sources and forms of knowledge;
- involve a range of stakeholders;
- are flexible and seek emergent alternatives rather than designing definitive solutions ('flexexecution')
- use multiple policy responses or management strategies (all partially addressing the issue/s);
- evolve from a group nurtured or auspiced by a credible and legitimate existing organisation to one with greater autonomy/ independence;
- are underpinned by formal agreements e.g. ToR or memoranda of understanding;
- have strong, independent leadership (including respected and independent chair);
- are supported by a secretariat;
- are member funded (cash and in-kind); and
- are only as elaborate as the situation demands.

Lessons from the research: time, trust, turf, process

Faced with problems that accumulate, collective action can add value or deliver what has been called “collaborative advantage” as opposed to “collaborative inertia” (Huxham 2003). Collaboration may be appropriate:

- when you need flexible ways of operating rather than rigid, bureaucratic processes (Goldsmith and Eggers 2004; Keast, Mandell, Brown, and Woolcock 2004; McGuire 2006; Perkins, Bauld, and Langley 2010);
- when you want to mobilise diverse resources on a scale beyond any individual agency (but need agreed sharing ‘formulae’) e.g. the resources and energies of different sectors (Craig and Taylor 2002) – and to share resources, risks, responsibilities;
- when you need to tackle complex issues (Williams and Sullivan 2007); and
- when there are multiple (potentially conflicting) interests and you wish to be inclusive and responsive to this diversity.

However, collaboration is not an ideal solution in all cases and potential benefit will only be realised if the collaborative grouping has appropriate brokering, coordination and leadership and overcomes challenges and avoids potential pitfalls associated with forming and maintaining networks.

Three common challenges:

Time

It is notable that both of the in depth case study examples were initiated more than two years ago and have been slow to progress through the stages of forming and establishing agreed structures and ways of working to actually be performing collaborations. It is commonly reported that even skilled facilitators and brokers take this length of time to cultivate trust, negotiate among the diverse partners and gain formal agreement to governance models and cost-sharing arrangements (Leach et al., 2002).

Unrealistic timescales that do not allow for these long lead times are equally common and frequently problematic in collaborative exercises (Goldsmith and Eggers 2004). This is partly because the ‘relational’ ways of operating that they involve and the essential relationship-building between stakeholders take time (Goldsmith and Eggers 2004; Stewart 2003). On the other hand recognised independent experts can often provide technical advice (for example on the location and specifications of monitors and reporting design) relatively quickly. In the short-term, collaboration will take more time and effort than taking action independently; however, in the long-term it may save time and duplication of efforts if the nature of problem demands a collective response.

This is not to say inertia and a lack of progress are warranted. In fact, ‘quick wins’ or small, incremental achievements are recognised as essential to the relationship-building process (Bryson, Crosby, and Stone 2006; Hudson and Hardy 2002).

The time required can be even more for collaboration related to addressing cumulative impacts than for other collaboration since the cumulative situation represents a complex, interconnected system. As one of our interviewees said,

“The more complexities you add into it in terms of number of impacts, the number of entities, the size of the area, then the more difficult it is to achieve a collaborative solution. So you have to be terribly, terribly patient and you need not just data about the technical nature of the cumulative impact, you need to be a good politician”

Trust

The importance of intangible, informal aspects such as personal relationships poses another challenge to multi-sector collaboration (see Stoker 2006; Sullivan, Barnes, and Matka 2007). This is especially the case if the sectors involved are usually in anti-collaborative competition with each other (a situation common not only in the private sector; Roberts and O'Connor 2008).

Whether because of competitive relationships, prior or current troubled working relationships, or from a lack of understanding about how stakeholder groups or disciplines operate, or personal factors such as personality or temperament, lack of trust becomes a barrier in collaborative efforts. Trust is not just about trusting personal relationships but trusting and respecting the knowledge, practices and expertise of fellow participants – which can be difficult if, for example, you have environmentalists, unionists, state government departments, local government, scientists, lay people and companies all at the table.

Turf

There is increased potential for cumulative impacts where ‘boundaries’ overlap. Defining boundaries (and ascribing areas of responsibility) can be critical especially with respect to cumulative impacts, which by their nature compound across space. This is likely to be challenging and is compounded in multi-stakeholder situations where various parties operate with different jurisdictions, where the receiving environment hosts mixed-land uses or where the cumulative impact is directly connected to competitive advantage rather than relating to pre-competitive (or non-competitive) space. In many of the 30 examples profiled and in both of the case studies, mines were not the only contributors to the accumulating operational outputs. In both cases, mining companies regarded it as important to have not just the regulator (government) and community interests ‘at the table’ but also other industries – whether agriculturalists, quarrying and housing construction firms or CSG companies. Hence, in mixed land-use regions, where it was in the interests of all mines impacting on a receiving environment to ensure that individual and cumulative impacts are effectively managed, this implied working with all others contributing to the problem.

‘Turf’ also relates to control of resources – and one of the common challenges for multi-sector collaborations is to gain agreements about the financial resources available (Hudson and Hardy 2002) and to establish productive working relationships between stakeholders with very different access to resources. While financial resources are not the only possible contribution from partners, it has been suggested that the degree of collaboration is limited if time and knowledge are the only resources contributed (Agranoff 2006). We found member-funding to be a feature of successful collaborative governance.

Turf issues surface when an imbalance, perceived or real, of resources, of influence and of benefits to the collaboration partners occurs. For example, one stakeholder group might see that another

stakeholder group has more influence on the process, or has more decision-making power or reaps more benefits from the collaborative effort; or, one participant (e.g. one company) takes on less responsibility. If partners do not see each other as equally involved in or benefiting from the collaboration, or if they see others as 'empire building' or using the collaboration to bolster their competitive advantage at the expense of other partners, 'turf' is getting in the way. Another issue in relation to turf is the ability to share data collected by different organisations due to commercial sensitivity and, if data is able to be collected, the consistency of data given different methodologies. The presence of a multi-stakeholder organisation that can generate data collectively can be one strategy to address both the issues of commercial sensitivity and comparability.

Process

To the degree that the challenges above are overcome and parties can commit to agreed ways of working together they can collaborate. There are a whole range of processes that enable collective action, but three crucial sets of practices that have been identified are:

- communication and dialogue;
- collective learning and knowledge transfer; and
- negotiation, decision-making and problem solving.

Each of these themselves involves a range of skills and competencies that can all present challenges and that underpin the complexity of collaboration. Collaborative approaches tend to take longer, involve uncertainty and risk, require sound processes for communicating, learning and problem-solving as well as high levels of trust. Consequently, there are many situations when the challenges mean that collaboration may not work. For example, when:

- there are fundamental differences between stakeholders involved and no basis for developing mutual understanding or room for negotiation;
- power, benefits or responsibilities are unevenly spread;
- key parties are unwilling to participate;
- the vision and goals of different parties are incompatible;
- there is not enough time to work through problems;
- the price of collaboration exceeds the benefits;
- institutional cultures of participants are competitive not collaborative;
- there is little trust between stakeholders and no way of cultivating it;
- there are inadequate resources to implement agreed actions; and
- participants are disillusioned because of past experience.

Of course, the ultimate test is if multi-stakeholder collaboration improves environmental or other conditions more than traditional regulatory processes and newer market-based processes (Koontz and Thomas 2006). However in both of the in depth case studies investigated it is too early for this kind of assessment.

The report concludes with details of a number of available guides for forming effective collaborative groups or toolkits for assessing the 'health' of partnerships.

Toolkits and guides for forming and assessing collaborative groups

Partnerships analysis Tool & Checklist (VicHealth)

<http://www.vichealth.vic.gov.au/en/Publications/VicHealth-General-Publications/Partnerships-Analysis-Tool.aspx>

While initially created for the health sector, this analysis tool and checklist provides a useful guide to plan, assess, monitor and maximise partnership effectiveness. It was revised in 2011 and now includes information on changing organisations. It is designed to help organisations:

- Develop a clearer understanding of the range of purposes of collaborations
- Reflect on the partnerships they have established
- Focus on ways to strengthen new and existing partnerships by engaging in discussion about issues and ways forward.

Guidebook for Promoting Good Governance in Public-Private Partnerships (United Nations Economic Commission for Europe)

<http://www.unece.org/fileadmin/DAM/ceci/publications/ppp.pdf>

This Guidebook demonstrates how governments and the private sector can improve governance in Public-Private Partnerships (PPPs) and creates a basis for the elaboration of training modules for PPPs. It addresses four key questions:

- What does governance mean in PPPs?
- How can governments improve their governance?
- What technical, financial, legal, and other challenges must be overcome to build capacity?
- How can PPPs improve efficiency and achieve social, economic and environmental objectives simultaneously?

Public-Private Dialogue Handbook (DFID, WB, IFC, OECD)

<http://www.publicprivatedialogue.org/papers/PPD%20handbook.pdf>

This handbook is for anyone who is interested in promoting public-private dialogue (PPD) as a tool for improving the conditions for the private sector. This includes donor agencies, governments, private sector representative associations, and individual businesspeople.

There is also a Charter of Good Practice using Public Private Dialogue for Private Sector Development available from: http://www.publicprivatedialogue.org/charter/PPD_Charter.pdf

Mining: Partnerships for Development Toolkit (ICMM)

<http://www.opml.co.uk/sites/opml/files/MPD%20Toolkit.pdf>

This toolkit focuses on six thematic areas where there is potential for partnerships between companies and other stakeholders to enhance the positive contribution and minimize the negative impacts of mining:

- Poverty reduction
- Economic development: Revenue management
- Economic development: Regional development planning
- Economic development: Local content
- Social investment
- Disputes and resolution

Public-Private Partnership Handbook (Asian Development Bank)

<http://www.apec.org/au/docs/ADB%20Public%20Private%20Partnership%20Handbook.pdf>

This Public–Private Partnership (PPP) Handbook provides an overview of the role, design, structure, and execution of PPPs for infrastructure development. With inputs from policy and transaction specialists, this handbook addresses a range of matters associated with PPPs, from policy considerations to implementation issues.

Assessing Your Collaboration: A Self Evaluation Tool

<http://www.joe.org/joe/1999april/tt1.php>

This is a short, simple self-assessment checklist on the key features involved in the collaborative process. It uses a likert-scale series of questions (12 questions total) and provides recommendations for improvements based on your total score.

Partnership Self-Assessment Tool

<http://partnershiptool.net/>

This tool is designed as an internal assessment of successful collaboration in partnerships. It includes a detailed questionnaire and a reporting template – both available to download in pdf format.

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Appendix 1: Cases of collaboration to address cumulative impacts in the resources sector

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
1	Moranbah Cumulative Impacts Group (Moranbah, Bowen Basin, Queensland)	Multi-sector (coal mining companies, local & state government, community & union reps.)	Air quality – dust (sink impact)	Local airshed (health and amenity of local community)	Communication & management	<ul style="list-style-type: none"> independent association formerly a sub-committee of Isaac Regional Council (local government) operating under a Terms of Reference (ToR) 	Coordinating <ul style="list-style-type: none"> council initiated quarterly meetings
2	Moranbah Growth Management Group (Moranbah, Bowen Basin, Queensland)	Multi-sector (regional council; state government departments; unions; BHP Billiton Mitsubishi Alliance, and Anglo Coal)	Social infrastructure – housing & land availability (source impact)	Local economy & community	Planning & advising <ul style="list-style-type: none"> identify development options and prepare a master plan/ strategy local and state government carriage of implementation 	<ul style="list-style-type: none"> working group set up by state government operated under a ToR chaired by a local member of parliament 	Cooperating <ul style="list-style-type: none"> shared funding arrangement
3	Fitzroy Partnership for River Health (Fitzroy River Basin, Bowen Basin, Queensland)	Multi-sector (mining companies, Queensland Department of Environment and Resource Management (QDERM); Fitzroy Basin Assoc., regional councils, Great Barrier Reef Marine Park Authority, CQUniversity, Queensland Resources Council (QRC)	Water quality – mining and agriculture (sink impact)	Fitzroy River catchment (aquatic ecosystems, fisheries), regional communities (domestic water use, stock watering)	<ul style="list-style-type: none"> Monitoring and Program implementation develop and implement integrated waterway monitoring and reporting 	<ul style="list-style-type: none"> auspiced by catchment group operating under MOU staff and contractors of catchment group provide secretariat 	Cooperating <ul style="list-style-type: none"> partners network meets bi-annually more frequent management committee and science panel meetings
4	Fitzroy Water Quality Advisory Group (Fitzroy River Basin, Bowen Basin, Queensland)	Multi-sector (environmental NGOs, state government departments; QRC, regional councils, universities, agricultural industry)	Water quality – mining and agriculture (sink impacts)	Fitzroy River catchment (aquatic ecosystems, fisheries), regional	Advising	<ul style="list-style-type: none"> QDERM chairs group and provides administrative support ToR 	Coordinating <ul style="list-style-type: none"> meets approximately every six weeks

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
		organisations)		communities (domestic water use, stock watering)			
5	Bowen Basin Mining Communities Research Exchange (Bowen Basin, Queensland)	Multi-sector (universities; government and resource industry research bodies)	Social & economic infrastructure, workforce and skills (source impacts)	Resource 'province' / geological basin (regional communities and economies)	Communication	<ul style="list-style-type: none"> informal network initiated by Central Queensland University 	Networking <ul style="list-style-type: none"> website and periodic workshops
6	Clean and Healthy Air For Gladstone (Gladstone, Queensland)	Inter-governmental (Queensland Health, QDERM)	Air quality – industrial air pollutants (sink impact)	Local airshed of Gladstone city and surrounds (health and amenity of local community)	Monitoring	<ul style="list-style-type: none"> Taskforce set up by state government 	Cooperating <ul style="list-style-type: none"> technical study & consultative process with local government, community and industry
7	North-West Queensland Indigenous Resources Industry Initiative (North West Minerals Province, Queensland)	Multi-sector (QRC, Queensland Government, Australian Government)	Workforce and skills – Indigenous employment and enterprise development (source impact)	North West Queensland region (Indigenous communities and businesses)	Management <ul style="list-style-type: none"> remove barriers to indigenous employment in the resource sector 	<ul style="list-style-type: none"> MOU two working groups to focus on (i) Indigenous employment and education, and (ii) Indigenous business development 	Cooperating <ul style="list-style-type: none"> resource pooling agreement meet every three months
8	Central Queensland Mining Rehabilitation Group (Bowen Basin, Queensland)	Intra-industry (consulting & resource company professionals)	Rehabilitation – mined land (source & sink impacts)	Local ecosystems proximate to mine sites (fauna, flora, waterways etc.)	Communication	<ul style="list-style-type: none"> voluntary part-time positions supplemented by a part-time coordinator with nominal remuneration 	Networking <ul style="list-style-type: none"> triannual workshops, monthly newsletters and a website

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
9	Surat Basin Engagement committee (Surat Basin, Queensland)	Multi-sector (local gov. mayors; reps. of landholder, NGO, agricultural and catchment groups; Directors-General of Dept. of Employment, Economic Development and Innovation - QDEEDI, QDERM and Coordinator-General; coal seam gas companies; QRC and Australian Petroleum Production and Exploration Assoc.)	Social & economic infrastructure, water quality, workforce and skills, biodiversity and rehabilitation – coal seam gas & agricultural sectors (source & sink impacts)	Regional ecosystems, (waterways, groundwater systems), regional & local communities and economies.	Communication & advising	<ul style="list-style-type: none"> Committee has two regional sub committees a committee of 20 scientists peer reviews information 	Coordinating <ul style="list-style-type: none"> chaired by a former AgForce Queensland president initiated by Queensland Government
10	Maranoa Joint Community Consultative Committee (Mananoa, Surat Basin, Queensland)	Multi-sector (two coal seam gas companies, origin and Santos, i.e. intra-industry collaboration; plus reps. of agricultural industry; government agencies; catchment groups; chamber of commerce; and regional council)	Social & economic infrastructure, water quality, workforce and skills, biodiversity and rehabilitation – coal seam gas & agricultural sectors (source & sink impacts)	Regional ecosystems, (waterways, groundwater systems), local communities and economies.	Communication, advising and monitoring: <ul style="list-style-type: none"> monitor and review company social impact management plans guidance to two participating companies as to the allocation of community investments. 	<ul style="list-style-type: none"> ToR independent chair-person steering committee consisting of a representative from each participating CSG company plus chair. 	Coordinating (consultative committee) & cooperating (intra-industry partnership by two companies to establish committee)
11	Coal Infrastructure Taskforce (Queensland)	Inter-governmental (state government departments)	Economic & social infrastructure – to service growth in coal sector (source impact)	Queensland wide – Bowen & Surat Basins and coastal port infrastructure (economy)	Planning & management	<ul style="list-style-type: none"> taskforce within state government with a direct line to state government decision-making and resources. 	Coordinating <ul style="list-style-type: none"> reports to the Cabinet Budget Review Committee, Queensland Gov.
12	Gladstone Schools Engineering Skills Centre (Gladstone, Queensland)	Multi-sector (Rio Tinto Aluminium Community Fund; NRG Power station; Australian National Training Authority; Education Queensland).	Workforce and skills (source impact)	Local Gladstone economy – youth employment	Program implementation <ul style="list-style-type: none"> Training and workforce development - 	<ul style="list-style-type: none"> independent centre funded by industry and government facility located on-site at NRG Power Station 	Cooperating <ul style="list-style-type: none"> students can attend program and work placements

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
					engineering training facility		
13	Gladstone Foundation (Gladstone, Queensland)	Multi-sector (Queensland Department of Infrastructure and Planning - QDIP; resource sector companies; regional council)	Social infrastructure (source impact)	Local community and economy of city of Gladstone	Program implementation and management <ul style="list-style-type: none"> mechanism to coordinate community investment from multiple resource projects 	<ul style="list-style-type: none"> charitable foundation governed by a board supported by advisory committee and an implementation officer 	Cooperating <ul style="list-style-type: none"> donations are made to a pool projects aligned with Gladstone Region Social Infrastructure Plan
14	Gladstone Industry Leadership Group (Gladstone, Queensland)	Intra-industry (Boyne Smelters Limited, Cement Australia, NRG Gladstone Operating Services, Queensland Alumina Limited, Rio Tinto Alcan – Yarwun)	Air quality, workforce and skills, social & economic infrastructure (source & sink impacts)	Local airshed, local economy and local communities in Gladstone city and surrounds	Management, monitoring & advocacy.	<ul style="list-style-type: none"> governed by board - General Managers from member companies code of conduct small secretariat & CEO sub-committees represent different professional areas 	Collaborating <ul style="list-style-type: none"> began as industry response to air quality issues – expanded scope to coordinate industry environmental and social performance
15	Gladstone Region Social Infrastructure Plan (Gladstone, Queensland)	Multi-sector (QDIP, Gladstone Regional Council, Gladstone Economic and Industry Development Board)	Social infrastructure -(source impact)	Gladstone city and surrounds (local communities and economies)	Planning	<ul style="list-style-type: none"> commissioned research and plan 	Coordinating <ul style="list-style-type: none"> 18 months research and planning process
16	Clermont Preferred Futures (Clermont, Bowen Basin, Queensland)	Multi-sector (Rio Tinto, Isaac Regional Council), local businesses	Social & economic infrastructure, workforce and skills (source impact)	Local community and economy (economic diversity of town of Clermont following mine closure & opening of new mine)	Planning and program implementation <ul style="list-style-type: none"> develop and implement a strategy for local economic diversification 	<ul style="list-style-type: none"> partnership between Rio Tinto and Isaac Regional Council guided by a steering committee supported by a paid project officer position 	Cooperating <ul style="list-style-type: none"> regular informal discussions and networking activities regular updates and progress reports to community

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
17	Port Curtis Integrated Monitoring Program (Gladstone, Queensland)	Multi-sector (Australia Pacific LNG, Boyne Smelters, Cement Australia, Gladstone Area Water Board, Gladstone Pacific Nickel, Gladstone Ports Corporation, NRG Gladstone, ORICA Australia, Queensland Alumina, Queensland Curtis LNG, Queensland Energy Resources, Rio Tinto Aluminium Yarwun, Gladstone LNG), CQ University, Fitzroy Basin Association, Gladstone Regional Council, QDERM.	Water quality – emissions from industries operating in the Port of Gladstone (sink impact)	Port Curtis local ecosystem (fauna and flora)	Monitoring <ul style="list-style-type: none"> • produces Port Curtis Ecosystem Health Report Card 	<ul style="list-style-type: none"> • MoU/ ToR? • funded coordinator 	Cooperating <ul style="list-style-type: none"> • jointly funded annual monitoring programs
18	Sustainable Resource Communities Partnership Group (Queensland)	Multi-sector (QDEEDI, QRC, Local Government Association of Queensland, regional councils)	Social infrastructure, workforce and skills (source impact)	Queensland resource communities and local economies	Program implementation and communication	<ul style="list-style-type: none"> • Qld government investment of AUD \$100 million • Multi-stakeholder partnership group identify projects for funding • operating under a Partnership Agreement 	Cooperation <ul style="list-style-type: none"> • share strategic information, coordinate solutions, undertake research
19	Sustainable Resource Communities Local Leadership Groups (North-west Minerals Province, Bowen Basin & Surat Basin, Queensland)	Multi-sector (regional council mayors, reps of mining and gas companies, Queensland government departmental staff, community and industry stakeholders)	Social infrastructure, workforce and skills (source impact)	Communities of the North-west Minerals Province, Bowen Basin, Galilee Basin & Surat Basin	Planning, communication and program implementation	<ul style="list-style-type: none"> • operating under a ToR • identify strategies and programs with links to regional planning 	Cooperation <ul style="list-style-type: none"> • consider solutions to address local issues at regular meetings
20	Isaac River Cumulative Impact Assessment (Isaac region, Bowen Basin, Queensland)	Intra-industry (BHP Billiton Mitsubishi Alliance, Anglo American)	Biodiversity and rehabilitation – mine subsidence impacts on Isaac River from long-wall coal mining	100km stretch of Isaac River (fauna and flora)	Monitoring and management	<ul style="list-style-type: none"> • voluntary impact assessment jointly funded by BMA and Anglo • consultant engaged to 	Cooperation <ul style="list-style-type: none"> • outcomes from study used in proactive management of

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
			(sink impact)			<ul style="list-style-type: none"> model mine subsidence close liaison with QDERM government regulators 	subsidence at mine sites.
21	Upper Hunter Mining Dialogue (Hunter Valley, New South Wales)	Intra-industry (New South Wales Minerals Council, coal mining companies)	Air quality, water quality, workforce and skills, social & economic infrastructure, biodiversity and rehabilitation (source & sink impacts)	Local community, local economies, local environments (health, amenity etc) within the Hunter Valley	Communication <ul style="list-style-type: none"> industry response to community concerns about cumulative impacts of mines and potential expansion 	<ul style="list-style-type: none"> consultation process run by the NSW Minerals Council on behalf of coal producers 	Networking <ul style="list-style-type: none"> survey of stakeholder perspectives view to implement a program of activities
22	Upper Hunter Air Quality Monitoring Network (Hunter Valley, New South Wales)	Multi-sector (NSW Office of Environment and Heritage and other agencies; local councils; NSW Minerals Council, coal mining and electricity generation companies)	Air quality (dust and other emissions from coal mining and electricity generation)	Local airshed (amenity and health of local communities in Hunter Valley)	Monitoring and advising	<ul style="list-style-type: none"> managed & auspiced by NSW Government advisory committee MOU and ToR apportioned funding provided by industry advisory committee 	Integrating <ul style="list-style-type: none"> monitoring network with 14 stations data publicly accessible online
23	Upper Hunter River Rehabilitation Initiative (Hunter Valley, New South Wales)	Multi-Sector (Hunter-Central Rivers Catchment Management Authority; NSW government agencies; coal companies and electricity generators)	Water quality, biodiversity and rehabilitation (source & sink impacts)	Local river catchment (fauna, flora, ecosystem services), local community (recreation, amenity)	Program implementation <ul style="list-style-type: none"> trial of river rehabilitation methods, 10 km reach of the Hunter River 	<ul style="list-style-type: none"> implemented by a local catchment group 	Collaborating <ul style="list-style-type: none"> funded through a Natural Heritage Trust grant, ARC research funds, State government and Industry
24	Gunnedah Minerals and Energy Working Group Gunnedah and Namoi Valley, New South Wales	Multi-sector (mayors of regional councils; reps. of state government agencies, coal and coal seam gas companies)	Water quality, workforce and skills, social & economic infrastructure (source & sink impacts)	Economy, community and environment in Gunnedah region	Communication <ul style="list-style-type: none"> potential impacts from coal & coal seam gas expansion in agricultural region 	<ul style="list-style-type: none"> forum for communication independent chair 	Networking <ul style="list-style-type: none"> Half day meetings every 2 months.

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
25	Hunter River Salinity Trading Scheme (Hunter Valley, New South Wales)	Multi-sector (NSW Office of Environment and Heritage; coal mining companies; and electricity generators).	Water quality – salinity of mine and power industry discharge (sink impact)	Hunter river (flora and fauna), local industries and communities (irrigators)	Monitoring and management	<ul style="list-style-type: none"> river monitoring, modelling, register of discharges and credit trading scheme hosted by NSW government multi-stakeholder operations committee costs shared by credit holders and discharge licence holders 	Coordinating <ul style="list-style-type: none"> salinity trading market based scheme emitters purchase credits to be used depending on river flow conditions
26	Ravensthorpe Hopetoun Coordination Group (Western Australia)	Multi-sector (shire of Ravensthorpe; WA government departments; Western Power; Water Corp; First Quantum Minerals; Galaxy Resources; Tectonic Resources; Goldfields - Esperance Development Commission)	Economic & social infrastructure (source impacts)	Regional community and economies in Ravensthorpe shire	Advising <ul style="list-style-type: none"> provide strategic direction and oversight for infrastructure delivery 	<ul style="list-style-type: none"> the Goldfields Esperance Development Commission convenes meetings and provides executive support 	Coordinating <ul style="list-style-type: none"> Meetings bi-monthly (first year), tri-monthly (post-first-year).
27	Pilbara Industry's Community Council (Pilbara, Western Australia)	Multi-sector (BHP Billiton Iron Ore, Chevron, Fortescue, North West Venture, Rio Tinto Iron Ore, Woodside; Commonwealth, WA and local governments; Chamber of Minerals and Energy, WA)	Workforce and skills, social infrastructure (social services and Indigenous employment)	Pilbara regional communities and economy	Advising, program implementation and management	<ul style="list-style-type: none"> auspiced by Chamber of Minerals and Energy Western Australia operating under a ToR 	Cooperating <ul style="list-style-type: none"> undertake studies coordinate company activities provide advice to government
28	Kwinana Industrial Area (Kwinana, Western Australia)	Multi-industry (resource processing and heavy industries – alumina, nickel and oil refineries, chemical factories, power plants, cement and fertiliser manufacturers)	Air & water quality – industrial waste emissions (sink impact)	Kwinana local environment (local airshed and local waterways)	Industrial synergy <ul style="list-style-type: none"> identify and establish by-product and utility synergies. over 30 companies and 47 synergies. 	<ul style="list-style-type: none"> Kwinana Industry Council established to act as a peak industry body for the industrial area 9 sub-committees overseen by a management committee and board 	Integrating <ul style="list-style-type: none"> database of inputs and outputs, reviews of company literature, one-on-one discussions and focused opportunity

	Title and Location	Participants	Cumulative Impact		Purpose	How it is Organised (structure)	How it Works (collaboration type)
			Type Addressed	Spatial Extent & Receptor			
							identification workshops.
29	BHP Billiton Iron Ore MOU (Pilbara, Western Australia)	Multi-sector (WA Department of Education, WA Department of Health, BHP Iron Ore)	Social infrastructure, workforce and skills (source impacts)	Pilbara communities	Program implementation	<ul style="list-style-type: none"> comprised of 2 separate MOU (Pilbara Health and Pilbara Education Partnership) 	Cooperating <ul style="list-style-type: none"> BHP Billiton iron ore committed to three years of investment
30	TENBY10 (Port Pirie, South Australia)	Multi-sector (Port Pirie Regional Council, SA Department of Health, SA Environment Protection Authority, Nyrstar Smelter; community reps.)	Air quality (sink impact)	Local community – health impacts of lead pollution from smelter	Communication, program implementation, monitoring, management	<ul style="list-style-type: none"> community committee meets monthly – reports to executive committee community committee has independent chair and open membership - operates under ToR 	Collaborating <ul style="list-style-type: none"> community outreach campaign and action undertaken by smelter in partnership with government

Appendix 2: Terms of Reference – Moranbah Cumulative Impacts Group

Moranbah Cumulative Impact Group (MCIG)

Terms of Reference

Purpose

This Terms of Reference sets out agreed arrangements to support networking, coordination and cooperation between the parties for the purposes of

- (a) working together to improve understanding, information sharing and monitoring by all sectors; and
- (b) informing and protecting the community and industry from the cumulative impacts of dust, noise and other amenity concerns as determined by the group.

The MCIG is a voluntary initiative by stakeholders who believe they can achieve improvements for the community by working together. It has a community rather than a mine-site focus and no powers to enforce behaviours by those participating. The MCIG has a legitimate interest in compliance with State and Local Government conditions and legislation, but its main focus is broader than individual performance issues.

Committee Structure

The MCIG will operate through the following structures

<i>MCIG Core Group</i>	
Function	Forum for transparent dialogue and continual learning. Custodians of pooled information. Collective formulation of MCIG positions, actions and projects. Setting and applying criteria for addressing new issues. Agreeing Project Officer tasks and MCIG Operating budget Amending these Terms of Reference.
Membership	<ul style="list-style-type: none"> • Three representatives from the relevant State government sector (e.g. DERM, DLGP, DEEDI). • Two representatives from Isaac Regional Council (1 elected, 1 staff). • Three to five representatives from a cross-section of the community (chosen through an EOI process, or by co-option, as demonstrating (i) a strong connection with a demographic or interest group they seek to represent,(ii) the skills to represent their group <i>and</i> take into consideration the interests of the broader community, and (iii) a commitment to the purpose and value of MCIG. The Independent Chair will coordinate selection of community representatives in consultation with MCIG). • Two Union representatives (representing the CFMEU and the Queensland Council of Unions). • One representative from each member company. • An Independent Chair. • The project officer will be an ex-officio member.

	<p>As well as their representative, each sector is encouraged to have one or more alternates. The alternates are welcome to attend all meetings not just those for which the representative is unavailable. Membership will be reviewed every 2 years or as decided by consensus or application.</p> <p>Potential new member companies will be invited to participate as observers initially until the annual review of resource contributions.</p>
Operation	<p>Meets regularly (quarterly) in Moranbah for ~ ½ day.</p> <p>Makes decisions by group consensus.</p> <p>Decides on the appropriate resources for operations and to implement actions and projects.</p> <p>Oversees the project officer and development and monitoring of operational budget.</p> <p>Manages membership transitions in the MCIG and induction of new members.</p>
<i>Project Officer</i>	
Function	<p>Operates the secretariat providing operational and administrative support to MCIG.</p> <p>Coordinates and implements actions and projects of MCIG</p>
Membership	Designated half time staff equivalent
Operation	<p>Organise meetings, circulate agendas and documentation for MCIG and any related working groups.</p> <p>Take minutes at all meetings and distribute in a timely manner.</p> <p>Facilitate group communications and support the Chair and MCIG.</p> <p>Maintain records of all actions and provide regular progress reports.</p> <p>Liaise with all members on MCIG business.</p> <p>Implement authorised communications and other activities.</p> <p>Plans and coordinates MCIG projects under the guidance of the Chair.</p>
<i>Independent chair</i>	
Function	<ul style="list-style-type: none"> • Provide strategic leadership and capacity building for MCIG • Facilitate group meetings and action • Foster open and trusting relationships within MCIG • Liaise with media in conjunction with Project Officer
Membership	<ul style="list-style-type: none"> • An 'external' person not associated with any of the groups represented on MCIG, nominated and chosen by the MCIG. • Someone with available time who commands public respect, is seen as impartial and, while not necessarily an 'expert', has familiarity with the sector, community and its issues.
Operation	<ul style="list-style-type: none"> • Remain neutral • Focus the group's effort on agreed purpose and tasks • Establish a clear context and framework • Manage group dynamics and MCIG's time • Liaise with secretariat over agendas, minutes, schedules etc • Liaise with the Project Officer over MCIG projects • Facilitate meetings
<i>Working Groups</i>	

Function	Support the Core Group with respect to specific projects and activities
Membership	Can be sub-group of MCIG or involve co-opted external experts or stakeholders (e.g. alternates or other additional people from participating sectors and beyond).
Operation	<ul style="list-style-type: none"> • Convened as required for specific tasks • Implementing and advisory role not decision-making • In-kind and cash budgets for most projects will be additional to the operational budget and negotiated separately.
<i>Observers (and invited presenters)</i>	
Function	To participate in open meetings on a casual or on-going basis, contribute to the discussions and learn from the exchanges
Membership	<ul style="list-style-type: none"> • Invited representatives of other industries whose activities may be impacting on amenity and development activity in Moranbah (e.g. Quarry, CSG, QR National). • People with relevant expertise, experience or interests may be invited from time to time to participate in meetings.
Operation	Have no voting rights. Cannot participate in closed sessions or closed meetings.

Resourcing

- All members will make in-kind contributions to the MCIG – notably of their time both during and between meetings and expenses to attend meetings and committee activities.
- The operation of the secretariat and expenses and the honorarium for the independent chair will be a significant recurrent cost. Responsibility for covering these costs will be shared amongst member companies and Council, according to a formula agreed between the parties. The amount will be reviewed during annual budget processes.
- Any specific projects devised by MCIG will require additional funding which can be negotiated with group members or external sources depending on the nature of the project.

Ground Rules

- **Be open**, honest and direct and speak for your constituency
- **Respect** others and yourself. No put downs, no calls/messages.
- **Take responsibility** for yourself, for the group, but not for other individuals
- **Be flexible** and revise your perspective with added understanding
- **Commit** and contribute equally
- **Attend** meetings regularly
- **Listen** to each other with an open mind
- **Read** materials and study information before meetings
- **Ask** questions when necessary
- **Create** solutions that everybody will support
- **Participate** collaboratively in group decision making
- **Discuss** what happens at MCIG meetings with your constituency
- **Work** hard, be patient, be positive, don't leave
- **Focus** on the future, consider lessons from the past

Communication

- MCIG is committed to increasing transparency, sharing information and informing the community. Consequently members will report information, discussions and decisions back to their constituencies and to the wider community where possible. Members should not, however, publicly discuss the personal views of another individual member or of other observers present at meetings.
- As well, members have an obligation to represent the information presented at meetings and the discussions of the group in good faith and non-prejudicial ways to the community.
- For sensitive matters, members may request a closed meeting session. Similarly presenters can indicate that some component of the information is 'off the public record'.
- Media liaison about the activities of individual groups/ companies remains the responsibility of those groups.
- MCIG will only undertake media liaison in relation to its own activities and will identify agreed media positions during meetings. The project officer will write media releases around these statements that will be circulated to the group (with clear timelines for release) prior to distribution to the media.
- The role of speaking to the media if required or, in other ways being the public 'voice' of MCIG will be undertaken by the chairperson and/or project officer as authorised at MCIG meetings.
- Members may identify themselves as members of MCIG and a list of members will be made public.

Term of involvement for MCIG Core Group and Independent Chair

Two year renewable terms.

Appendix 3: Memorandum of Understanding – Fitzroy Partnership for River Health



Memorandum of Understanding



Background

The Fitzroy Partnership for River Health (Partnership) formalises collaboration between governments, industry, community and research organisations with an interest in the health of the waterways of the Fitzroy Basin. This Memorandum of Understanding supports improved water resource management through the monitoring, assessment, reporting and communication of waterway health in the Fitzroy Basin.

Objectives

This Memorandum of Understanding sets out the arrangements agreed to support cooperation and collaboration between the parties to develop and implement an integrated waterway monitoring program that will report publicly on waterway health at the catchment scale and support improved water resource management by all sectors.

Scope

The scope of the Fitzroy Partnership for River Health encompasses all groundwaters, rivers, off-stream wetlands and estuaries in the Fitzroy Basin, and near-shore coastal and marine environments.

Roles and responsibilities

The parties to this Memorandum of Understanding undertake to:

- Actively participate and contribute to the structures and processes established by the Partnership
- Provide financial support through the payment of an annual membership fee (set by the Management Committee) and additional financial contributions negotiated annually.
- Collaboratively develop and implement monitoring, assessment, reporting and communication activities
- Review and amend these arrangements as necessary to support the achievement of the Partnership's objectives.

Principles

The Partnership adopts the following principles:

- Inclusiveness – the Partnership will provide opportunities for all major resource users, managers and monitoring agencies to participate in and influence Partnership decisions and actions
- Transparency and accountability – the Partnership's decision-making processes are clear, accessible and responsible
- Scientific rigor and independence – the Partnership's monitoring, assessment, reporting and communication activities are conducted in a scientifically rigorous manner
- Integration and alignment – the Partnership's activities seek to improve the efficiency and effectiveness of regional waterway monitoring and management programs through coordination and collaboration across scales and sectors



- Adaptation– the Partnership will seek to actively evaluate and adjust its activities in response to the outcomes achieved and new knowledge available.
- Capacity building – the Partnership seeks to improve the capacity of all water resource managers to reduce their impacts on regional waterways.

Authority / Limits to authority

This Memorandum of Understanding is a non-binding expression of the intentions of the parties to work collaboratively towards the achievement of the Partnership objectives. There is no legal or financial obligation incurred through participation in this Memorandum of Understanding. The parties maintain their individual discretion to act independently.

Commencement, review and period of the Partnership

This Memorandum of Understanding will commence on 1 July, 2011 and will continue while at least 3 partner organisations support its activities. It is the intention of the parties to consider formal incorporation within the first 3 years of the Partnership.

The Memorandum of Understanding may be amended at any time by written mutual consent of all parties. Any partner wishing to withdraw from the Partnership may do so by written notice to the other parties. Any additional party wishing to join the Partnership may do so by signed agreement to this document and payment of the annual membership fee or by agreement of the Management Committee.

Operation

The Partnership shall operate through the following structures:

<i>Partner's Network</i>	
Objective	Forum that includes all parties to the Memorandum of Understanding. The Partner's Network will nominate and endorse a Management Committee. Provides strategic feedback to the Management Committee.
Membership	Representatives of all parties to the Memorandum of Understanding
Operation	Meets periodically (at least biannually). Engages with the Secretariat on operational matters. May contribute to groups established by the Secretariat for specific activities e.g. communications.
<i>Management Committee</i>	
Objective	To provide strategic oversight and direction to the activities of the Partnership.
Membership	Members nominated and endorsed by the Partner's Network, from the Partner's Network. Membership to comprise the host agency, major investors and a balance between extractive and primary industries, governments and other agencies. Membership reviewed every 2 years.
Operation	Meets regularly (at least quarterly). Oversees the Secretariat. Engages the Partner's Network in strategic decisions. May contribute to groups established by the Secretariat for specific activities e.g. communications.



<i>Science Advisory Panel</i>	
Objective	To provide science advice and quality assurance relevant to the Partnership, to the Management Committee and Secretariat.
Membership	Skills-based membership
Operation	Chair and panel appointed by the Management Committee. Meets periodically as required by the Management Committee (at least biannually)
<i>Technical Network</i>	
Objective	To provide the technical capacity to undertake monitoring, assessment, reporting and communication activities.
Membership	Scientific and technical staff drawn from the Partner's Network and other science providers engaged in Partnership activities.
Operation	Meets periodically as required to undertake collaborative and contracted technical Partnership activities. May contribute to groups established by the Secretariat for specific activities e.g. the development of monitoring protocols.
<i>Secretariat</i>	
Objective	To provide operational support to the Partnership.
Membership	Staff of the host organisation and others as appropriate.
Operation	Supports and administers all the Partnership groups. Managed by the host organisation, overseen by the Management Committee.
<i>Host organisation</i>	
Objective	To provide an institutional host for the Partnership Secretariat and Partnership activities (financial and staff management).
Operation	To contribute to Partnership decisions as a member of the Management Committee. To operationalise Partnership activities through management of the Partnership secretariat.

Membership

List the member organisations here.



Signed for and on behalf of)

.....)

(organisation)

this day of 20)

by.....)

(full name)

.....)

(position)

who is a duly authorised officer

in the presence of:

.....

(full print name of witness)

.....

(signature)

.....

(signature of witness)