ACARP Project C25032

Supplementary Report S3

Models for stakeholder engagement for post-mining land use change decisions in the Bowen Basin, Australia

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Research Ethics

This study was approved by the CQUniversity Human Research Ethics Committee (Approval H16/11-305) according to the National Statement on Ethical Conduct in Human Research.

Abstract

Mining makes a major contribution to many regional communities, yet has major impacts on land use. At the close of mining operations, decisions have to be made about the standards of rehabilitation, choice of post-mining land use, and the processes to exit mining operations and achieve the transition to another land use or industry base. In Australia, there are regulatory requirements for end-of-mine planning and requirements for community and stakeholder consultation to ensure that rehabilitation standards and post-mining land uses meet community expectations. However there appears to be little information available about how to integrate the community into decision-making processes; the format and standard of consultation that would be appropriate; nor an evaluation of existing models in terms of their possible transferability to (or adaptation for), post-mining land use applications. This paper is one of a sequence associated with ACARP Project C25032, that consider examples and processes to involve key stakeholders in planning around the resources sector in Queensland, Australia to help address these gaps. It presents five different models of stakeholder engagement relevant to post-mining land use decisions, drawing on current engagement processes across the mining, agriculture and NRM sectors. The models of engagement are classified across a number of characteristics to help select and tailor their applications to different industry and planning needs.

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Other reports in the C2503 series:

Stakeholder involvement in planning to maximise the benefits and acceptance of land packages post-coal-mining in Central Queensland. ACARP Project C2503. Final Report

S1: Processes to transfer post-mining lands to agricultural uses in the Bowen Basin: issues, economics and analysis

S2: An evidence based proposal for stakeholder engagement in post-mining land uses

S3: Models for stakeholder engagement in land use change decisions in the Bowen Basin.

S4: Assessing the convergence of stakeholder views on post-mining lands uses in the Bowen Basin

S5: Using workshop processes to generate stakeholder agreement about post-mining land uses

1. Introduction

This paper is the third supplementary report for ACARP project C 25032, *Stakeholder involvement in planning to maximise the benefits and acceptance of land packages post-coal-mining in Central Queensland*. It focuses on examples and processes to involve key stakeholders in planning around the resources sector in Queensland. In Australia the regulatory requirements for end-of-mine planning include requirements for community and stakeholder consultation to ensure that rehabilitation standards and post-mining land uses meet community expectations. The expectations about the involvement of public and stakeholder consultation appear to be increasing for the mining sector in Queensland, as shown by the 2017 discussion paper on mine rehabilitation released by the Queensland Government (2017):

> *For new mines, the community will be consulted on the life-of-mine plan in the environmental authority application process. Existing mines will also transition to have a life-of-mine plan, prepared with a consultative process. Any significant amendment to the life-of-mine plan will also be the subject of public consultation. (P6)*
>
> *Achieving acceptable rehabilitation outcomes is the shared responsibility of government and industry and requires consultation and communication with the community. (P12)*
>
> *Another fundamental element of life-of-mine planning is consultation and stakeholder involvement. Ideally, all stages of a life-of-mine plan should be consulted on, to account for any changing interests stakeholders may have. (P35)*

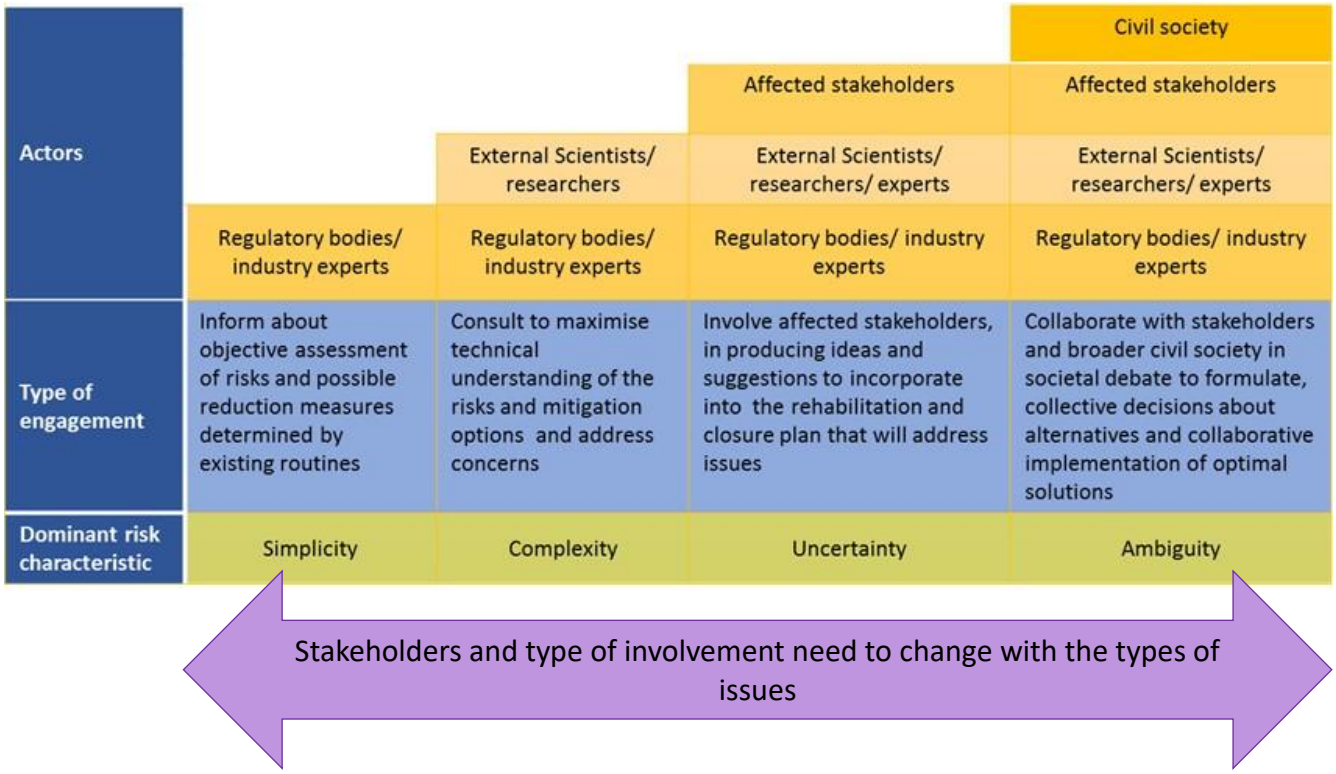
Many regulatory and planning processes of government require public and stakeholder consultation, particularly around planning and approval processes. Consultation and engagement can help policy makers to deal with areas of key public concern, such as those of the environment sector. However, there appears to be little information available about how policy makers expect the community to be integrated into decision-making processes around the mining and resources sectors, and the format and standard of consultation that would be appropriate especially with respect to mine rehabilitation and closure. While researchers such as Reed (2008) have identified that effective consultation should involve all relevant stakeholders, be transparent and provide the best information possible, there do not appear to be many examples and guidelines that the mining industry and regulators can draw on to identify appropriate consultation practices. Hence, there is value in further clarifying ways for all stakeholders to have their interests considered in planning of rehabilitation and post-mining land use.

Involving stakeholders in planning and approval decisions involves consideration of multiple issues, as shown in Figure 1. In the past, the issue of mine rehabilitation and closure was regarded as a simple problem that needed straightforward and uncontroversial action and only concerned a mining company and the regulators. As the complexities, and long-term uncertainties became more obvious, specialist technical expertise has been added, especially environmental scientists including hydrologists, soil scientists and botanists. However, there has rarely been recognition that the expertise of those in the business of the post-mining land use, and those with knowledge of sustainable stewardship of the surrounding or pre-mining territory, could also be of value.

There is a very extensive literature on consultation, collaboration and engagement processes that can be applied broadly to public and private contexts, and how these can improve resource management. For example, Renn et al. (1993) identified a three-step process to include the public in decision making processes, while Rowe and Frewer (2004) and Hassenforder et al. (2015) identify in more detail the processes under which successful participation can occur. There has been some attention to the role of public participation in environmental management issues (e.g.

Reed 2008) and public lands issues (e.g. Haddock and Quinn 2016), as well as to engagement through governance processes where consultation and participation are embedded in the choice of institutional structures (Vella et al. 2015; Potts et al. 2016). However, there appears to be scant literature on suitable processes for engagement and consultation with the mining sector about rehabilitation and closure in Australia, apart from specific case studies such as Minserve and Central Queensland University (2007) for ACARP Project C15035 and Owen and Middlin (2010).

Figure 1: Matching types of problems, stakeholders and engagement processes



Source: Adapted from International Risk Governance Council 2012: 18
http://www.irgc.org/IMG/pdf/An_introduction_to_the_IRGC_Risk_Governance_Framework.pdf
and IAP2 2006 Public Participation Spectrum https://www.iap2.org.au/resources/iap2s-public-participation-spectrum

In this report we argue that there are increasing requirements for consultation and engagement with mine planning, including for end-of-mine planning. We identify the key factors that should be considered in designing a consultation exercise and provide an analysis of different types of consultation processes that can be applied to post-mining land use change in the Bowen Basin. We also detail some case study examples of existing consultation processes relevant to the resources sector in central Queensland, which help to illustrate how a consultation process may be matched to the needs of a particular situation. The results show that there is no single consultation process that is suitable to all situations. Instead the type and conduct of the consultation and engagement process has to be tailored to the needs of each situation. Nevertheless, we outline a general sequence of steps and decisions that can be applied in ways sensitive to various contexts.

The report is structured as follows. In the next section we provide a review of the literature around consultation processes and models for effective engagement. This is followed in section three by identification of key types of consultation processes and a selection guide to help tailor them to

individual situations. In section four, five case studies of existing engagement and consultation processes are provided to illustrate the different types of consultation processes of interest. This is followed in section five by an overview of the key issues and challenges involved. Conclusions follow in the final section.

2. Previous Research

Stakeholder panels

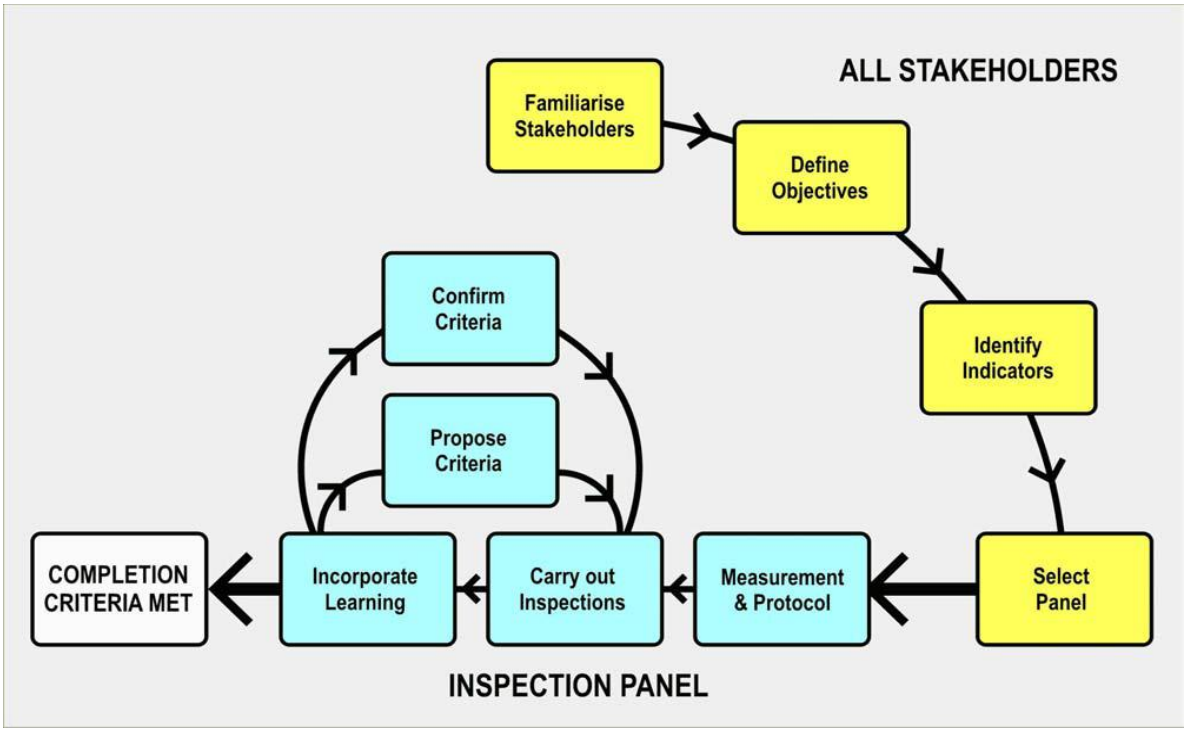
There has been previous work on using stakeholders to evaluate environmental standards on mines in the Bowen Basin, such as the work reported by Minserve and Central Queensland University (2007) for ACARP Project C15035. In that project, an engagement framework to assess mine rehabilitation was developed and tested in the following stages:

- contact and invite stakeholders;
- convene an initial stakeholder meeting to identify attributes of landscapes suited to visual assessment, determine broad parameters, and to select a stakeholder panel;
- convene panel meetings, first to develop procedures for inspection and evaluation and then to test these procedures on three examples of rehabilitated land; and
- review inspection results to assess their usefulness and credibility.

The approach is summarised in Figure 2, where the engagement and evaluation processes occurred over two key stages:

- develop the objectives for and form a stakeholder panel; and
- conduct evaluation through several iterative stages to develop and confirm criteria and then apply them to the case study of interest.

Figure 2: Framework for development and operation of a stakeholder panel.



Source: Minserve and Central Queensland University (2007) page 35.

Minserve and Central Queensland University (2007) concluded that it was feasible to develop stakeholder panels to visually inspect and assess rehabilitation performance, noting that the panel restricted its ambit to criteria that could be assessed visually. Benefits of that approach included the support of stakeholders and the involvement of external expertise in the development of indicators and criteria. Specific reservations noted by Minserve and Central Queensland University (2007) included ensuring the independence of the stakeholder panel, achieving consistency of evaluations over time and location, the relevance of current conditions to future performance, and the length of the proposed monitoring period.

Another direct example of a stakeholder panel being applied in the Bowen Basin was reported by Owen and Middlin (2010), who designed a stakeholder panel to develop specific rehabilitation objectives and criteria on a future mining lease at Moranbah. The panel was set at 5 to 8 members, with panellists chosen to represent traditional owners, residents of Moranbah, landholders, special interest groups and local government. The stakeholder panel that was formed consisted of six members, and a facilitated process was followed to develop the terms of reference, operating rules and the criteria for evaluating land rehabilitation by visual assessment.

These case study examples have been generalised as the basis for proposing stakeholder panels as "*an alternative approach to the assessment and demonstration that rehabilitation goals have been met*" (Merritt, 2018:140). Such mining-specific examples can be augmented with a broader literature about involving stakeholders in environmental management. Reed (2008) provides a detailed review of the literature, identifying evidence that stakeholder participation can enhance the quality of environmental decisions by considering more comprehensive information inputs. He also notes that the quality of decisions made through stakeholder participation is strongly dependant on the nature of the process leading to them, and that many claims of benefits have not been realised. The analysis is summarised with eight features of best practice participation that were identified from a grounded theory analysis of the literature:

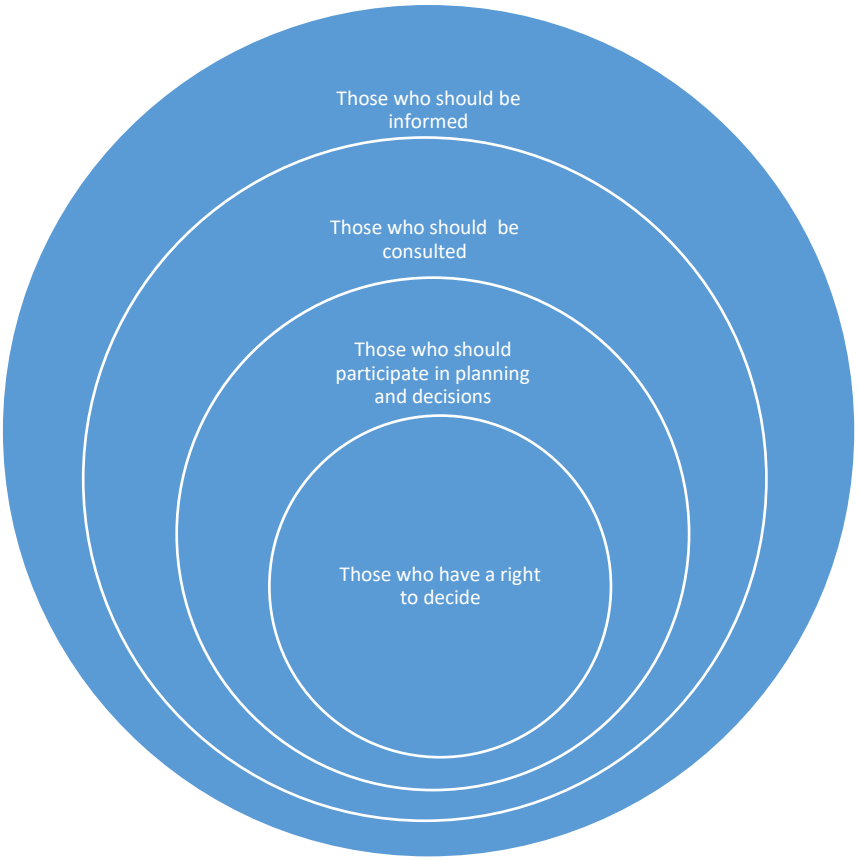
- stakeholder participation needs to be underpinned by a philosophy that emphasises empowerment, equity, trust and learning;
- where relevant, stakeholder participation should be considered as early as possible and throughout the process;
- relevant stakeholders need to be analysed and represented systematically;
- clear objectives for the participatory process need to be agreed among stakeholders at the outset;
- methods should be selected and tailored to the decision-making context, considering the objectives, type of participants and appropriate level of engagement;
- highly skilled facilitation is essential;
- local and scientific knowledges should be integrated; and
- participation needs to be institutionalised.

Stakeholders

Inherent in the cases studied are understandings of stakeholders as a cross-section of predominantly local people who are potentially affected in some way by closure and by decisions about future land use which link to definitions in the literature of stakeholders as those who affect or are affected by a decision or action (Reed et al., 2009). Stakeholders are deemed to have an interest in the issues, (because of their legitimacy or stake in the outcome); influence (because of their power or ability to affect the outcome) and/or an imperative (in terms of needing the matter to be given timely attention) (Mitchell et al., 1997; Reed et al., 2009)

Stakeholders can be self-selected or selected based on a stakeholder analysis of various kinds (See Mitchell et al 1997). For example, stakeholders may be identified by their proximity to a project, as representatives of demographic, socio-economic, or special interest groups or through professional roles. A common approach to analysing stakeholders is a matrix system of differentiating potential stakeholders based on criteria such as interests, influence, networks, and experience (Reed et al 2009). More recently there are writers who focus on the dimension of problem definition (or the task confronting stakeholders) to determine who to involve and the type of engagement. This is particularly evident in the risk governance literature and distinguishes the types of engagement and categories of stakeholders suitable for tackling simple challenges from those needed for more complex ones or ones where there is greater uncertainty or diversity of values (labelled 'ambiguity') (IRGC, 2012) (see Figure 1).

Figure 3: Hierarchy from information groups to decision groups



Besides a matrix method, another example of a stakeholder analysis is provided in Figure 3, where those with a right to decide may include the regulator, the land owner and the mining proponent (often the last two categories overlap), with other categories including larger groups of participants. As an earlier ACARP project has noted,

> "*…the mine operator and regulators are stakeholders, but of a special order, in that they are also, respectively, applicant and arbiter. Thus, … in order to avoid conflict of interest both have the right to input on the process by which the evidence is obtained but should not take a position of influencing the outcomes of the process*" (Minserve and CQU 2007, p. 9).

The suggestion is that these actors serve as a resource and especially source of information rather than attempting to sway the argument or set the agenda. Similarly, regional residents or authorities

and the broader public will be affected by some issues, and can be considered as a stakeholder in those cases, though post-mining land use will have mainly local and regional consequences.

Of course, stakeholder engagement will not always involve these people in panels or groups. However there is potential for open exchanges in groups to add value to post-mining land use planning in ways that have proved beneficial in other systems of planning, and environmental and natural resource management (Renn 2006, p.35):

- enhancing mutual understanding;
- generating new options;
- decreasing hostility and conflict between sectors;
- enlightening policy makers;
- producing competent, fair and optimised solutions; and
- facilitating consensus, tolerated consensus and compromise.

This last point raises a pertinent issue for a process designed to satisfy the regulator's requirements for consultation, stakeholder involvement and agreement about land uses. As a key rationale for involving stakeholders is to generate greater levels of stakeholder and community agreement, it is important to identify what agreement entails. At one level, this is a diffusion process, where generating agreement with stakeholders is likely to lead to increased acceptance and endorsement by communities. This is because stakeholders represent key sectors that may be affected, and because the process identifies key issues to be addressed. So while the process involves stakeholders, the aim is to better align outcomes with community aspirations and goals.

A second aspect is that the level to which agreement can be reached can vary, from unanimous support through to negotiated outcomes with dissenting opinions. There are various possible outcomes of deliberation that imply a degree of convergence on a solution all can 'live with' even if it is not their ideal solution (Renn 2006). Many stakeholder processes aim to achieve some level of consensus agreement, even it is about the process to be adopted to deal with different tradeoffs. Definitions of what constitutes consensus varies, but **it is often taken to be** a measure of the general agreement among the members of a certain group or community, with varying approaches to measure consensus, such as percent agreement (Diamond et al. 2014). The concept of consensus also represents the process to find areas of shared agreement, such as "the point at which all can agree" (Zurita 2006, p. 21). Alternatively, consensus "has been reached when everyone agrees they can live with whatever is proposed after every effort has been made to meet the interests of all stakeholder parties" (Susskind 1999 p.6). However, some argue that a consensus-building approach leads to a focus on the most tractable differences and imprecise general principles, and produces lowest common denominator results in the quest for agreeable solutions rather than quality ones. Therefore, a dialogue that focuses on problem definition, surfaces argumentation and seeks to build mutual understanding of divergent values – or a deliberative approach – is suggested as a preferable alternative (van de Kerkhof 2006).

Panel Processes

As Figure 3 suggests, there is a strong link between the level of stakeholder interest and the level of engagement of stakeholders and a range of possible purposes:

- Inform
- Consult
- Involve
- Collaborate
- Empower

These five categories are described in Table 1 showing that they differ in the degrees of 'voice' and empowerment of stakeholders. This follows the seminal work of Arnstein (1969) (see also Webler 1999). As Rowe and Frewer argue (2005), other typologies concentrate on other dimensions. These include key objectives of engagement (including decision-making, representation or information exchange); the function that the engagement performs (ensuring more informed stakeholders, resolving conflicts or increasing confidence in decision-makers), and/or the engagement structures that are adopted (in terms of matters such as who is involved, how they interact and how often they meet). Devising stakeholder engagement in rehabilitation and closure so that mining leases will subsequently support grazing enterprises requires consideration of all of these dimensions.

Table 1: Purposes of stakeholder participation in planning post-mining land use options

Option	Purpose of stakeholder engagement	Description
A	**Inform** *[Can be passive e.g. leaflets, websites or press reports; or more active e.g. hotline, public briefing, open day)*	Company uses in-house information and existing routines to formulate a rehabilitation and closure plan and informs stakeholders of it and the rationale
B	**Consult** *[Can be individually or in groups e.g. interviews, surveys, expert panel, field trip]*	Company consults with experts and selected stakeholders to internally formulate a rehabilitation and closure plan and informs stakeholders of how the input influenced the plan
C	**Involve** *[E.g. focus groups, advisory committee, options taskforce]*	Company holds dialogue with stakeholders to learn their values, preferences, concerns and constraints and incorporates the ideas and suggestions they make into the plan
D	**Collaborate** *[E.g. Interactive workshops maybe with presentations and exhibits; Appreciative enquiry; Delphi iterations]*	Company holds dialogue with stakeholders to learn their values, preferences, concerns and constraints, incorporates as much as possible into the rehabilitation and closure plan, and then collaborates with and takes advice in implementing
E	**Empower** *[E.g. Consensus Conference, Delegated decision, Referendum]*	The rehabilitation and closure process is jointly planned, on the basis of mutually understood values, preferences, constraints and concerns; and parties work together to implement it sharing authority, responsibility and resources

(Adapted from Lawrence & Deagan, 2001)

3. Developing Engagement Processes

The analysis provided here breaks the formation and functioning of a stakeholder panel into five key stages.

The first step (**WHO**) is to invite participation by a diverse group of stakeholders based on a stakeholder analysis. From this group, an appropriate number of those with deep knowledge about

some aspects of local land uses and the socio-economic context who are connected to identifiable stakeholder groups and have willingness and availability for an extended process can form a panel.

The second step (**WHY**) involves identifying the purpose of the panel and its reason for existence, following a classification such as that shown in Table 1. Identifying the purpose helps to provide some clarity over the types of functions involved, the style of engagement that is appropriate, and the actions that can be taken. This type of classification makes it clear that there is no need to use a stakeholder panel if the only functions are to inform or consult; collaborative processes are only appropriate if the relevant functions are to involve, collaborate or empower. The purpose should also consider the general or specific scope and brief of what stakeholders are to be consulted about or empowered to address.

The third step (**HOW**) is to align the panel's purpose with the context in which a stakeholder panel might operate to suggest not only the style of engagement but also the model of operation. A series of questions to guide this in the context of post-mining land use planning is provided in Table 2. The questions are sequential, and can be adapted to a decision framework, as shown below in Figure 3.

Table 2: Identifying the context in which a stakeholder panel might operate.

Question	Rationale/ principles (linked to theories of risk governance, SLTO and IAP2)
1. Do you have all the information you need to plan and work towards final land use working alone?	Complex or uncertain issues will benefit from an exchange of extensive information and perspectives.
2. Are the potential options for future land use limited and the range of issues already defined?	When there is uncertainty or ambiguity it is beneficial to consider multiple options
3. Is acceptance by local people critical for effective implementation of any plans for rehab and post-closure land use?	In situations of public resistance or criticism it is valuable to provide opportunities to influence
4. Is it reasonably certain that stakeholders and the government will accept unilateral decisions/ actions of the company?	Where the company has low trust, credibility and legitimacy it is important that others participate
5. Are relevant stakeholders willing to engage with each other in dialogue about future options and associated opportunities and risks?	When people / groups have divergent (or apparently incompatible) interests, values and goals a stakeholder group and social learning can facilitate the development of mutual goals and acceptable trade-offs
6. Would the quality of stakeholder and company input or future relations be improved if they learn more about the issues related to options after closure?	Giving stakeholders an opportunity to be heard helps to develop 'relational capital' which has value beyond the short-term
7. Are relevant stakeholders in the company and community willing to take collective actions to implement any decisions?	Where conflict with or between stakeholder groups is not great and there is a will to integrate knowledge and values, a collaborative approach is likely to be effective
8. Are the company and stakeholders prepared to share power and responsibility for decisions and actions that may be taken to avoid and mitigate risks or enhance opportunities?	The risk-holder retains greater authority – to the extent that risks are shared and mutual trust and respect prevails, authority is equalised.

SLTO=social licence to operate; IAP2=International Association for Public Participation.

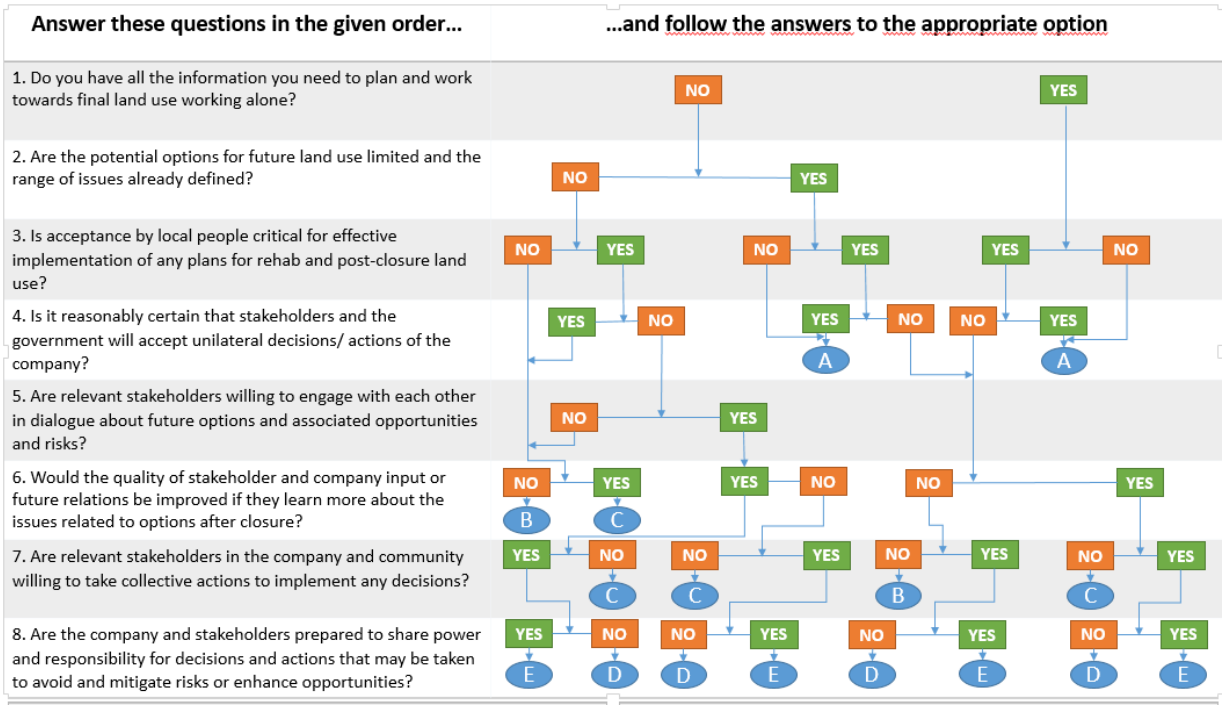
The combination of the exercises provided in Tables 1 and 2 is demonstrated in the decision framework in Figure 3, which has been adapted to issues of consultation around mine land use change. The decision framework (Figure 3) helps to identify which model of engagement is appropriate (the letters match the categories in Table 1). Application of the decision framework helps to identify if the initial summation of purpose for a stakeholder panel fits the situation context.

There are a plethora of forms of stakeholder engagement that involve multiple elements of objectives, functions, structures, problem definition and stakeholder empowerment. These determine matters such as the panel's resourcing, meeting format, governance and decision-making processes often captured in a Charter or Terms of Reference. Comparison with well documented and readily available models helps to select the most effective model for a stakeholder panel in given situations to achieve the desired benefits and purpose. Five samples are provided, each one combining in an idiosyncratic fashion: local and regional input, expert information, the regulatory stages/ system and prevailing business practices. They are:

- Community Reference Group
- Special Issue Group
- Community Consultative Committee
- Expert Advisory Panel
- Taskforce

All can provide a structure for local and regional people potentially affected by transition from mining to a subsequent land use to share knowledge and engage in a social learning process.

Figure 3. Decision framework to align purpose of a stakeholder panel with the operating context



As a fourth step (**WHEN**), it is important for the panel to agree about timing – in many respects. The frequency of 'meetings', length of panel members' 'terms in office'; duration of the panel's operation and alignment with various phases of mine life and regulatory processes should all be openly discussed by panel members. This will raise questions of panel renewal, capacity-building of panel members and continuity. Without attention to such details panels lose impetus.

Finally, the fifth step (**WHAT**), is to design an appropriate deliberation process to follow during group sessions which might often have a workshop, opportunity-seeking (or problem-solving) focus. A facilitated dialogue exploring options relevant to a real or authentic case is recommended for complex issues such as post-mining land uses (van de Kerkhof 2006). This step is itself a sequence of activities that will likely take some time to work through. Six essential elements of such a process are:

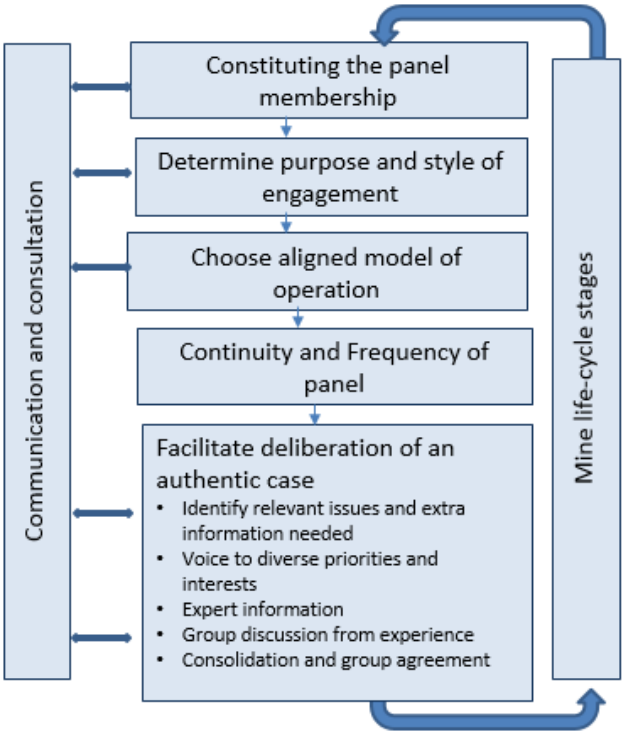
- Identify relevant issues and areas where extra information is required;
- Hear the range of priorities and views;
- Provide requested specialised (expert) information to the group;
- Undertake group planning exercises for post-mining land use change;
- Technical consolidation and synthesis; and
- Confirmation that the final plan meets stakeholder approval.

Most of these steps are themselves multi-dimensional and have different implications for information management, legitimacy, and social dynamics as well as for costs and convenience. They can be summed up as:

1. WHO to engage with; how representative to be and whether to seek the participation of affected stakeholders, technical experts, regulators, local authorities, industry practitioners and civil society;
2. WHY the group will operate – what its purpose, scope, and brief should be in terms of objectives, issues, scale, and focus;
3. HOW to resource, structure and operate the group and reach and use decisions;
4. WHEN in the expected life of the mine (which can be decades) it is appropriate to involve stakeholders, what the timing of interactions might be, and how to ensure continuity and renewal; and
5. WHAT sequence the panel should follow in working through the issues and options it identifies.

As Figure 4 illustrates, this sequence is iterative throughout the mine life-cycle stages and involves transparent communication and consultation throughout – not only within the panel but also with the wider stakeholder cohort. A sense of how various models apply these steps can also be gained by considering the case studies in section 4.

Figure 4: Steps involved in forming and operating a workshop-based stakeholder panel



4. Case Studies of Stakeholder Engagement in Central Queensland's Resource Sector

Various types of stakeholder panels have been used in Queensland for different resource management issues. Five models of stakeholder engagements that are currently being used in the mining/NRM sectors in Queensland have been identified and are reviewed here, in approximately ascending order of responsibility and empowerment, illustrated with six case study examples:

- Community reference group (e.g. Rolleston Mine Community Reference Group)
- Special issue group (e.g. Glencore Groundwater and Environment Reference Group; Ensham Mine Voids/ Nogoa River Floodplains)
- Community Consultative Committee (e.g. Gladstone LNG Regional Community Consultative Committee)
- Expert advisory panel (e.g. Fitzroy Partnership for River Health / Gladstone Healthy Harbour Partnership)
- Taskforce (e.g. Fitzroy River Water Quality Technical Working Group).

4.1 Rolleston Community Reference Group (RCRG)

This example consists of an invited cross-section of community members (agriculture, business, local and State government, police, teachers), and each of the members serves a two-year term. Of note, the group membership is chosen by the mining company and not through an open invitation. There is a formal structure with minutes and meeting agendas that provide an opportunity for the group members to raise issues, hear progress reports, and inspect sites for rehabilitation progress. However, meetings are mostly an information sharing session rather than inviting opinions from the group members.

Meetings are usually held in Springsure, Rolleston, or at the mine site and attendance has tended to drop off over time. Rehabilitation issues are regularly discussed in the meeting but informed discussion of these issues required extensive reading of rehabilitation reports, which may have discouraged participation. As well, since the 2000s, the main opportunity for official community input on environmental management and long-term goals is the EIS public consultation stage (even for post-mining land use) and activities comply with the resultant environmental conditions thereafter. The group's influence on directions and behaviours is mainly in prompting company consideration of any issues that the group members raise.

4.2 Special interest group (a) Glencore Groundwater and Environment Reference Group (GGERG)

Rio Tinto's Clermont Mine was purchased by Glencore in 2014. GGERG was commenced during the Rio-Tinto operations period and has continued under the new operators. The GGERG focusses on landholders' special interests in groundwater. When the alternate water supply agreement (AWSA) was negotiated, this supported the group's focus and mandate. This is a forum for open and cooperative discussion where reports of community complaints, presentations and broad environmental issues are considered as well as specific monitoring and expert reports. The charter (ToR) was co-designed with landowners and has given stability through changes of ownership of the mine. This stakeholder engagement panel consists of an independent chair and eight members. Members of this committee attend on a unremunerated, voluntary basis for a two year term, however the independent chair is paid by the mining company. The main purpose of the committee is to deal with underground water quality monitoring, and ensure independent results and recommendations to the industry and the regulators. They meet quarterly and their charter guides relationships with the industry (through the mine managers) as well as within themselves. The main tasks of the chair are to ensure transparency in operation, establish trust and foster a positive relationship with the community.

4.3 Special interest group (b) Ensham Mine – Voids/ Nogoa River Floodplains

Ensham mine's group was established as a community reference group in response to the regulator's requirements for a 2 year process to determine the best options for final voids. More recently it has decided to narrow the name and scope to ensure that the focus issues are prominent and that the group addresses the issue of what to do with the voids upon completion of mining. This group has about 10 members with and most of the group members are the neighbours of Ensham Mine. The group has an an independent (remunerated) chair, a formal terms of reference and a two-year technical study program for best end-use of the land (voids). The group has access to expert studies but also, the group's technical study must include engagement with stakeholders. Minutes of the stakeholder group need to go to the regulator.

4.4 Gladstone LNG Regional Community Consultative Committee (RCCC)

This group involves a cross-section of key sectors in Gladstone to manage the social and economic issues caused by new developments. It was initially required by the Coordinator-general's department as a part of EIS conditions during construction of the three LNG plants, but has been continued since as a forum by the three LNG companies. Membership is invited and representative of key sectors. Members are voluntary/ unpaid – including an independent chair. Meetings are formally managed, and minutes are publically available. Interest of members from some sectors has fluctuated as issues change, e.g. the agriculture sector was involved during construction phase when pipelines were being

laid. Now, in operations phase, it is more issues like training and air quality that are the focus. The Committee has provided a forum where different sectors have been able to raise issues as well as receive updates and responses from the LNG companies. The Committee identifies the key issues for focus between meetings.

4.5 Expert Reference Panel: Fitzroy Partnership for River Health's Expert Scientific Panel / Gladstone Healthy Harbour Partnership Independent Science Panel

Science panels or expert panels are typically used where there is need to handle technical information and provide technical advice; they are also used when there is a need to demonstrate independence and build community trust. Expert panels are usually funded by State government and industry and sometimes by local government. Typically expert panels may involve both local and outside experts, and commission and organise independent assessment and research. Consequently there is greater need for financial and technical input. The focus of an expert panel can be narrow (i.e. a single task or issue) but the scope can also be broader.

In the two cited examples, the technical panels operated in conjunction with tri-sector partnerships of industry, government and community groups, where the technical panels prepared work for and reported to the relevant partnership. While the partnerships were responsible overall for the relevant report cards, the science panels are responsible for ensuring that the report cards are accurate and underpinned by rigorous science.

4.6 Taskforce: Fitzroy River Water Quality Technical Working Group

A taskforce, inquiry or working group can be used to drive major changes in policy or resource allocation, or to investigate a particular issue. These are typically set up by government and report to government. While government may still hold the power to make decisions, a taskforce/inquiry/working group will normally be charged with conducting a body of work and developing particular recommendations for government to consider – often within a defined timeframe. A taskforce usually includes representatives from government, industry and community groups, but at regional or state levels rather than at local levels. For example the Fitzroy River Water Quality Technical Working Group involved a cross-section of representatives from government, industry and community, and was focused on managing the issue of mine water discharges and impacts on water quality in the Fitzroy. The recommendations of the group went to the Queensland Government and the relevant government agencies to help set policy in this area.

4.7 Panel model characteristics

Given the above examples, it is possible to summarise five characteristics of each panel as illustrated in Table 3:

- WHO is involved: the number and sorts of people, and how they are appointed;
- WHY the panel functions: its purpose, scope and brief;
- HOW the panel operates: resourcing, meeting structure and governance, chairing, agenda-setting and use of outputs;
- WHEN the panel operates: At what stage of mine life (or issue relevance), how often it meets, how long it operates etc;
- WHAT sequence the panel follows in working through the issues and options it identifies

Table 3: Characteristics of select models of stakeholder panels

	Community Reference Group e.g. Rolleston Coal CRG	Special Issue Group e.g. Glencore Groundwater and Environment Ref. Group (Clermont)	Community Consultative Committee e.g. Gladstone Regional Consultative	Expert advisory panel e.g. Fitzroy partnership science panel	Taskforce e.g. Fitzroy River Water Quality Technical Working Group
WHO? Membership Type How appointed? Number and sorts of people to include	Invited reps of stakeholder groups Landholders and neighbours	Representatives of those influenced by or able to influence actions and decisions about the issue Landholders (2); Community (4); Company (2) Agforce(1) Landcare (1) Regulator (~2)	Representatives of a cross-section of sectors for two-year terms Company (3x 2) Community (12) Social service (3) Regional (3) Economic (2) Indigenous (1) Environment (1) Local Gov'nt (1) State Gov (1)	Appointed 'experts' Key fields / knowledge groups 7 – 9 independent specialists (academics, researchers, prominent people in relevant institutes / organis'ns	Appointed/ volunteer key actors – usually Senior government officers as steering committee Representatives re regional/state Regional (3) NRM (1) Industy (4) (Indigenous (1) Environment (3) Local Gov'nt (4) State Gov (Health)(1) Sunwater (1) CQUniversity (1)
WHY? The 'purpose', or brief of the panel? And the Scope of the panel: Issue specific or general? Site-specific or regional?	General issues, site-specific. Regular information exchange and discussion of issues. Identifying issues of community concern; facilitating distribution of infor about the mine's work and plans	Specific issue and site-specific. To manage issues of specific concern, provide a forum to raise questions and provide technical information	Initially specific issues and region-wide . Two-way information sharing between the Gladstone community and 3 LNG companies. Special focus on cumulative impacts. Identification of issues and opportunities impacting the community.	Issue specific – whole harbour or catchment focus. Guides the development of the report card, reviews reports and activities of Partnership. Provides science advice and quality assurance to the Partner Network	Issue-specific; Catchment focus Specific problem solution. In this case study and make recommendations about cumulative impacts of mining activities on water quality in the Fitzroy Basin.
HOW? Resourcing; Meeting structure and governance of panel; Decisions	Convened by company	Independent Chair, formal meetings with agenda and minutes (publicly available). Expert advice and presentations	Independent Chair Minutes publicly available. Guest speakers.	Independent Chair, Resourced by tri-sector partnership. Funded for technical and expert advice	Chair from government, funded by government. Department staff provide technical support
WHEN? At what stage, how often and for how long to operate?	Several meetings per year over expected life of mine – 15 years?	Standing committee with quarterly meetings	Standing Committee throughout 6 years phase of construction	Standing committee – Meets usually 3- 5 times per year.	Time limited – about 9 months. Usually with intensive period of meetings at short intervals
WHAT? sequence the panel follows to wor through options	Identifies relevant issues and information needs	Identifies issues, expresses views, requests expert info and manages issues	Identifies issues, expresses views	Identifies issues, provides expert advice and technical consolidation	Identifies issues, solicits expert information and makes recommendations

4.8 Stakeholder assessments of positive features and limitations of cases

Positive features endorsed in the examples include:

- Groups that have a mandate (especially a legally binding requirement) are taken seriously – e.g. the mine has interrupted production on GGERG 'advice'.
- Key to longevity is giving landowners a stake and achievements to take pride in (e.g. the Alternate Water Supply Agreement for GGERG)
- Importance of company being transparent and open as a basis for mutual trust and respect
- Ability to access independent reports and build trust in scientific reports produced by company
- Purpose and focus adapting over the life of the mine as key issues shift
- Formal governance models with ToRs, minutes, agenda and clear membership criteria foster positive relationships.

Observed potential limitations of some models:

- Limited decision-making power if the mine and the regulator will not change any plans or procedures as a result of the group's deliberations and decisions.
- Lack of clarity about when consultation in such groups about future land use should happen: during operations and/or when mining is coming to an end
- If poorly run, reference groups can serve as a 'tick and flick' exercise with little influence and few opportunities to challenge and tackle key issues
- Some individuals end up over-consulted and over-referenced.

5. Key Challenges and Issues

These case study examples were discussed with a cross section of stakeholders in a project workshop, held in Blackwater in September 2017. There were 13 participants, most of whom had attended one or more of the previous workshops. A key focus of the workshop was to identify the preferred design of a stakeholder working group and a process to engage stakeholders. In the workshop, the five case studies outlined above were presented to the stakeholders, who then evaluated their potential for use for post-mining land use planning in the Bowen Basin.

Challenges

There was general agreement that a stakeholder group to address post-mining land use and mine relinquishment issues would be appropriate for mines in the Bowen Basin, but there was no clear agreement about the nature and structure of a panel. One of the industry attendees favoured an expert panel while another industry person supported a special issue group or single purpose committee such as pre- and post- shut down committees. It was suggested that such as group should be formed at least five years before mine closure, with a focus on post mining land use.

The second issue was who would sit on the panel. One of the landholders suggested that technical experts and landholders should hold positions with an independent chair; while a NRM member suggested adding regulator and mining industry as panel members in a possible collaborative model. Other suggestions were that a representative group could could be drawn from the wider community and include land holders, local and regional natural resource management and conservation representatives, mine managers and regulators. The non-mining stakeholders agreed that regulators should sit on the committee because it may help to achieve better outcomes for the community, as well as generating more trust in the process. There were divergent views about costs since the

independence of company-funded panels is queried. For instance, as an alternative to company funding, a NRM member suggested that the government should meet the costs of the stakeholder panel as well as bear the salary cost of an independent chair (considered essential to the efficient operation of a panel). All panel members should maintain transparency while having clear guidelines about acceptable and necessary confidentiality to progress the processes. Everyone in the discussion stressed the need for genuine participation and the need for those involved to have the capacity to contribute to the issue.

Workshop participants were asked about the responsibility and influence of members and the panel. The current system makes the government the only adjudicator of "safe, stable, non-polluting" determination and rehabilitation certification. The stakeholders could contribute to the end use or post-mining land use plan, and help to present the community's choices and voices to the regulators. The discussion identified that some of the key challenges for formation and operation of a stakeholder panel are potential conflicts of interest of the group members as well as with the industry and the regulators, potential manipulation of the committee, lack of consistency or common opinion among the group members, potential variation between different panels, and lack of expert knowledge from a range of different valid perspectives.

Other challenges in summary:

1. Getting agreement: there is a diversity of views and probably "no single right answer". No individual land-user will want to be constrained by a group decision.
2. Consultation processes: when to involve people, and which people to involve, were the two important questions raised by most participants. A legalistic view is that the EIS provides the public consultation opportunity on end use and fulfils requirements and thereafter the environmental authority (EA) sets the conditions which no further consideration or stakeholder input will influence. However a pragmatic view is that the regulator takes 'safe ground' and makes 'political' decisions even if the science points to it being 'safe, stable and non-polluting', therefore showing there's community agreement and unlikely to be community backlash will be 'another arrow for your bow' for the mining companies.
3. Risks of conflict of interest and opportunistic manipulation of the committee: for example, this may occur by the company or a potential future user (or category of users) being involved in setting conditions for transfer.
4. Consistency: achieving different outcomes with different mines and different panels (somewhat related to the breadth of committee brief – for example, is this mine-by-mine or broader).
5. Extended process: closure planning occurs right from the EIS stage, and there is considerable evolution of all mine plans. For example there have been moves away from planting exotic grasses to native grass species. Identifying the point at which stakeholders should be consulted is difficult.

Other issues raised in this session:

- Many of the planning issues can be sorted out between a mining company and a landholder (as the next end user), and it is not clear what role a stakeholder panel has in these decisions.
- An issues-based panel will have the most value, because this involves more interest than just the company and the end-user but would this need to be set up early, or just in response to a particular issue … perhaps there is a core reference group, which then deals with subsets of issues as they arise (and one of these subsets might be end-of-life transfer)

- Use of groups is driven by conditions and circumstances but don't always need collaborative decisions. Moreover, the style/form of group that is suitable will change at different times. Nevertheless, a group that brings together community expertise, techno-scientific expertise and the regulator to pool knowledge, values and strategies can add value.
- The five models overviewed in the above section give good options to select from, depending on consultation needs
- Expert group has a role – particularly in advising the regulator and when 'required' for informed decision. But putting too much faith in experts has problems.
- A special interest group may be appropriate when final land use is already determined and specifics are yet to be defined.
- A committee and map based process is good to define general parameters but it would narrow down to bilateral discussions between miner and pastoralist/ next owner-operator.
- The regulator needs to be there as they are responsible for eventual sign-off – their presence would save a committee wasting time on unacceptable ideas. But the level of interest to attend appears to be low, perhaps because 'we only get involved at the end'.
- Not all groups have the opportunity, time and budget to be involved.

6. Conclusions

The background for this study is that while there are increasing requirements for consultation and engagement with mine planning, including for end-of-mine planning, there is little guidance about what form this consultation and engagement should take. There are some very specific examples of stakeholder panels that have been purposely designed for rehabilitation assessment (e.g. Minserve and Central Queensland University 2007; Owen and Middlin 2010), and there is substantial evidence that other models of engagement are possible and fit-for-purpose in specific contexts. This includes i a large academic literature on engaging stakeholders to help with environmental assessments, and a number of practical examples.

The focus of this paper has been to identify the key factors that should be considered in designing a stakeholder consultation exercise and provide an analysis of different types of consultation processes that can be applied to post-mining land use change in the Bowen Basin. Five different types of consultation models that already exist in central Queensland to manage resource issues have been categorised, with six examples provided of existing collaborative and expert models.

One key outcome of this analysis has been to demonstrate that there is no single consultation process that is suitable; instead the type and conduct of the consultation and engagement process has to be tailored to the needs of each situation. Another key outcome has been to demonstrate the extent to which consultation and engagement with experts is widespread across resource sector issues. By comparison, the mining sector appears to currently have lower levels of such engagement and consultation than other sectors.

The major product generated from the research reported here is a series of tools that can be used in planning five key stages of a stakeholder engagement process that stakeholders can co-create First, determine eligible stakeholders and constitute the panel membership, Second, identify the purpose of a stakeholder panel and style of participation. Third, choose an aligned model of operation with agreed modus operandi. Fourth, agree the duration, frequency and timing of panel interactions. Finally, as a panel engage in facilitated deliberation of an authentic case (whether real-life or a realistic

hypothetical scenario). These steps, involving transparent communication and consultation throughout the mine life-cycle stages can be summed up as a question framework:

1. WHO to engage with;
2. WHY the group will operate – what its purpose, scope and brief should be in terms of objectives, issues, scale, and focus.
3. HOW to resource, structure and operate the group and reach and use decisions
4. WHEN in the expected life of the mine it is appropriate to involve stakeholders and what the timing of interactions might be; and
5. WHAT sequence the panel should follow in deliberating about the issues and options it identifies.

Applying these criteria and decision frameworks to the formation, design and operation of a stakeholder panel offers a process that will be as effective as possible and responsive to the needs of a particular situation**.**

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