CHAPTER 17.4

Management of the Social Impacts of Mining

Daniel M. Franks

INTRODUCTION

The value of a "social license to operate" is increasingly recognized within the mining industry. Unmitigated negative social impacts have the potential to result in negative publicity, increased litigation, and reputational damage, or to delay, prevent, or close down mining in existing and prospective areas as a result of community concerns. On the other hand, the positive impacts associated with mining projects can be welcomed by communities and governments. Assessment and ongoing management of environmental impacts are relatively common fixtures in the mining industry, as evidenced through formal environmental impact assessment processes and environmental management plans. Only more recently have approaches emerged to link social impact assessment with ongoing management and to proactively respond to social and community issues.

This chapter outlines techniques and processes that assist first in identifying and responding to social issues during planning and then in guiding and monitoring projects during operation through to postclosure. The term *management* is used in this chapter to refer to the coordination of activities in responding to social impacts and social risks. Effective management requires an understanding of social issues, which can be gained through ongoing assessment. Through both assessment and management, the design and implementation of mining activities can be shaped to enhance environmental and community outcomes.

Social impact assessment and management are the responsibility of dedicated community relations practitioners at most mining operations. In addition, however, there is a need for mining engineering professionals to be familiar with such approaches, since effective management requires integration across all aspects of the operation. In recent years, mining companies have increasingly come to recognize the value of using management systems to manage all aspects of their operations. Commencing with the introduction of quality systems and environmental management systems based around key international standards (ISO 9000 and ISO 14000, respectively), the trend now is to bring these specialized areas together into integrated management systems. It is essential that the management of social issues be part of this trend and not considered in isolation from the other parts of the business.

This chapter begins with a discussion of the social impacts of mining and then looks at each of the phases of social impact assessment and management that make up current practice in the field (Figure 17.4-1). These phases are consistent with an adaptive management framework or the plan-do-check-act cycle. Adaptive management emphasizes continuous improvement through an iterative process of planning, implementation, monitoring, and adjustment. The phases of social impact assessment and management include (1) the scoping and formulation of alternatives, (2) profiling and baseline studies, (3) predictive assessment and revision of alternatives, (4) management strategies to avoid and mitigate negative social impacts and enhance positive impacts, (5) monitoring and reporting, and (6) evaluation and review. The chapter concludes with lessons that can inform technical and management roles. Through greater awareness and consideration of social impacts and risks, mining engineering professionals will find their projects are more acceptable to communities and have a greater prospect of success.

SOCIAL IMPACTS AND RISKS

A social impact is something that is experienced or felt (real or perceived) by an individual, social group, or economic unit. Social impacts are the effect of an action (or lack of action) and can be both positive and negative. Social impacts can vary in type and intensity, and over space and time. Examples of social impacts associated with mining operations include employment effects; changes to social services, such as health and childcare or the availability and cost of housing; and cultural change, such as changes in traditional family roles as a result of the demands of mining employment, or even the breakdown of traditional economies due to the introduction of a cash economy. Environmental impacts also have social implications. Mining activities can result in changes to community amenities, health, or the availability and quality of water and land (Table 17.4-1).

Impacts can be direct, such as the impact of noise and dust, or result from indirect pathways, such as road fatalities

Daniel M. Franks, Research Fellow, University of Queensland, Sustainable Minerals Institute, Centre for Social Responsibility in Mining, Brisbane, Australia

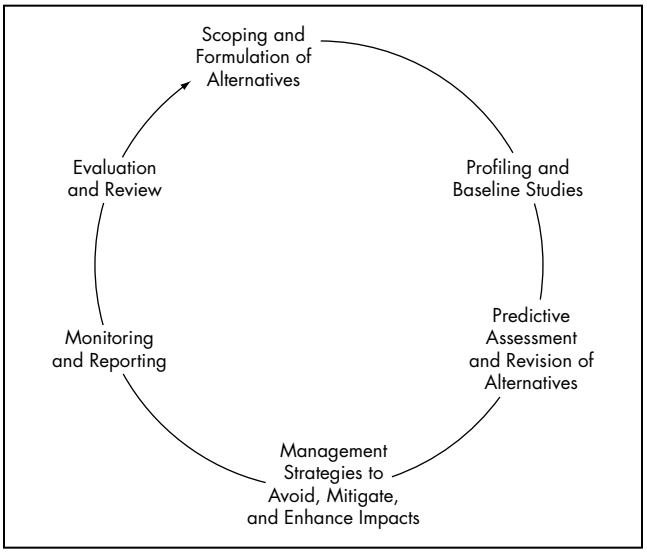

Figure 17.4-1 Phases of social impact assessment and management. The phases should be applied to each stage of the mining life cycle as part of an adaptive management cycle.

resulting from increased traffic in a nearby town servicing a mine. Impacts often accumulate and interact such that they trigger or become associated with other impacts. Cumulative impacts arise from the compounding activities of a single operation or multiple mining and processing operations, as well as from the interaction of mining impacts with other past, current, and future activities that may not be related to mining (Franks et al. 2009a).

A social risk is the potential for an existing or planned project to have an impact on individuals or groups or, conversely, to be impacted by them. Like impacts, social risks are both positive and negative because of the potential for mining to generate social and economic opportunities, such as economic and community development and employment.

The fear of an action can often be as important a generator of impact as the action itself. Perceptions of impact, opportunity, or risk are subjective, and public understandings do not necessarily correspond with scientific perspectives. There are a number of reasons for this. Nontechnical factors, such as personal value systems, previous experience, levels of trust in information sources and methods, and openness to change, all influence the way individuals and communities perceive and respond to change.

PHASES OF SOCIAL IMPACT ASSESSMENT AND MANAGEMENT

Social impact assessment (SIA) is a process for understanding the social issues associated with development. SIA is focused on how to identify, avoid, mitigate, and enhance outcomes for communities and is most effective as an iterative process, rather than a one-off activity at the outset of mining (Vanclay 2003; Becker and Vanclay 2006). Social impact management refers to systems and strategies undertaken during the implementation phases of a development (including exploration) to monitor, report, evaluate, review, and proactively respond to change. Together, SIA and impact management provide a very effective tool to address impacts, if the team conducting the work are well integrated with the overall management of the entire operation.

Not all social impacts are predictable. Because communities and the external environment are dynamic, an element of uncertainty will always be present. Similarly, not all impacts can be avoided or mitigated. However, SIA can provide insights, focus attention, and identify key issues as perceived by stakeholders to predict and anticipate change, and social impact management can assist in proactively responding to the intended and unintended consequences of mining developments.

SIA and impact management are most effective when undertaken across the life cycle of mining and resource processing, encompassing all of the activities from exploration, construction, extraction, and processing, through to postclosure, as well as including recycling and waste management. The varied social impacts across the mine life-cycle phases and the extraction and resource processing stages demand a varied range of approaches to assessment and management. For example, the exploration phase often entails a need to carefully manage community expectations, a challenge in maintaining continuity, and a risk that the outcomes at this early stage can greatly influence the future of relations. At the construction phase, there is invariably a large influx of temporary contract workers into a region that may pose challenges for communities; at closure, impacts are generated by the withdrawal of economic activity and employment, and management requires long-term planning to support alternate futures. Similarly the nature and scale of impacts, and thus the scale and scope of assessment and management, will vary with the type of extraction. Opencut pits involve the removal, processing, storage, and rehabilitation of large amounts of material that can pose risks to waterways or affect the visual amenity of a region; underground mines can create subsidence at the surface, which can affect other land users; heap leach and in-situ leach operations can pose risks to groundwater that may be used by other people and industries; and the various stages of processing will demand varied inputs and create by-products and hazardous materials that can pose risks to communities. The form and level of assessment and management is determined by the significance and scale of the action, as well as by the sensitivity of the community, the location, and its environment.

SIA is a common requirement of regulatory approval processes at the project approvals phase for mining and processing stages in many jurisdictions. These SIAs may be independent or integrated within environmental impact assessments. Beyond this regulatory requirement, SIAs are undertaken by mining operations in response to an actual (or potential) major change in the project or impact on a community—for example, in preparation for closure or for a major expansion. Social impact assessment can also address any particular issues faced during exploration, resettlement, temporary scale-down of operations, or a community development program. Assessments are most useful when maintained and periodically updated as "living" documents to inform decision making. Social impact management approaches, such as community reference panels, social management plans, grievance mechanisms, and community development initiatives, are increasingly required by government legislation, as well as by industry and corporate policies/standards.

The following sections introduce and describe each of the phases of SIA and impact management. Consistent with an adaptive management approach, many of the techniques mentioned may be useful in several of the phases. For example,

Table 17.4-1 Common changes induced by mining activities that can lead to social impacts and risks

Social and Cultural Change	
Population and demographics	In-migration, out-migration, workers' camps, social inclusion, growth or decline of towns, conflict and tensions between social groups
Social infrastructure and services	Demands on and investment in housing, skills (shortages and staff retention), childcare, health, education, and training
Crime and social order	Corruption, domestic violence, sexual violence, substance abuse and trafficking, prostitution, change in social norms, pace of change for vulnerable communities
Culture and customs	Change in traditional family roles, changing production and employment base, effect of cash economy, reduced participation in civil society, community cohesion, sense of place, community leadership, cultural heritage
Community health and safety	Disease, vehicle accidents, spills, alcohol and substance abuse, pollution, interruption to traditional food supply, awareness and treatment programs
Labor	Health and safety, working conditions, remuneration, right to assemble, representation in unions, labor force participation for women
Gender and vulnerable groups	Disproportionate experience of impact and marginalization of vulnerable groups (e.g., women, disabled, aged, ethnic minorities, indigenous, and young), equity in participation and employment
Human rights and security	Abuses by security personnel (government, contractor, company), social disorder in camps, suppression of demonstrations, targeting of activists, rights awareness programs
Economic Change	
Distribution of benefits	Employment, flow of profits, royalties and taxes, training, local business spending, community development and social programs, compensation, managing expectations, equitable distribution across state/regional/local/ethnic/family groups, cash economy
Inflation/deflation	Housing (ownership and rents), food, access to social services
Infrastructure	Demands on, and investment in, roads, rail, ports, sewerage, telecommunications, power and water supplies
Socio-Environmental Change	
Pollution and amenity	Air (e.g., dust), water (e.g., acid and metalliferous drainage, cyanide, riverine and submarine waste disposal), noise, scenic amenity, vibration, radiation, traffic, government capacity to monitor and regulate
Resources (access/competition)	Land, mobility, water (groundwater, river, ocean), mineral resources (artisanal and small-scale mining), cultural heritage, forest resources, human, postmining land use
Resettlement	Consent and consultation for resettlement, compensation, ties to land, adequacy of resettlement housing and facilities, equity, postsettlement conditions, livelihoods
Disturbance	Disruption to economic and social activities (including by exploration), consultation for land access, frequency and timing, compensation
The Process of Change	
Community engagement	Consultation, communication, participation, empowerment, access to decision makers, transparency, timing, inclusiveness—particularly for vulnerable and marginalized groups—respect of customs and authority structures, reporting
Consent	Indigenous sovereignty/title (free, prior, and informed consent), community consent
Participation	Planning, development of programs, monitoring, selection of alternatives and technologies, operational aspects
Remedy	Grievance and dispute resolution, acknowledgment of issues, compensation, mitigation
Agreements	Equity, timely honoring of commitments, issues with delivery, duress, clarity of obligations, capacity and governance (including government capacity to respond to and manage change)
Community development	Participation, adequacy, appropriateness, capacity to facilitate, consistency, prioritization

management approaches such as community reference groups can be effectively used to identify issues during scoping. To avoid duplication, the techniques will be discussed in the phase in which they are most commonly used. Table 17.4-2 presents a variety of social research methods and impact assessment techniques that are often, but not exclusively, applied at the scoping and predictive assessment phases.

Scoping and Formulation of Alternatives

When developing a new project, planners are usually faced with a number of alternative options. Impact assessments provide an opportunity to investigate these alternatives in greater detail to assist decision makers in choosing the most appropriate option.

The scoping phase sets the parameters for the later phases of assessment and management by determining the scale, timing, and focus of the assessment, ascertaining who is likely to be impacted and identifying the actions that are likely to result in impacts.

Scoping will begin by defining the purpose of the assessment and identifying background material that may influence the assessment. This includes regulations and legislation, government and corporate policy and programs, standards, and operating procedures. After these have been taken into account, the next step is to identify project stakeholders.

Early public involvement is crucial to identifying attitudes and perspectives, harnessing local knowledge, and defining processes for further public involvement (more information on the identification of stakeholders appears in "Profiling and Baseline Studies"). With the assistance of stakeholders, the actions that are likely to result in impacts and the extent to which these impacts may be felt can be initially identified. Case studies of related actions may assist in this regard, and any gaps in knowledge should be recorded.

Alternative options should be formulated for later analysis and an initial appraisal of the impacts of these alternatives undertaken. Impacts can be prioritized, in consultation with stakeholders, to narrow down the analysis

Table 17.4-2 Common social and economic research methods and assessment techniques

Method	Description
Literature review	A critical summary of current knowledge on a topic drawn from an existing body of literature.
Interview	A method of primary data collection that consists of in-depth questioning. Interviews may vary according to the type of informant, the type of medium (telephone or face-to-face, individual or group), the setting and recording, and the type of questioning (structured, semistructured, and unstructured).
Focus group	A group interview method where a facilitator poses questions to generate discussion among participants.
Survey/questionnaire	A form with questions used to solicit information from a statistically significant group of respondents. Surveys may be used in SIA to provide data on the characteristics and opinions of a population and may vary according to the choice and wording of questions, the type of instrument (e.g., mail-out, telephone, or face-to-face), the sample size, and sample frame.
Stakeholder analysis	A stakeholder is anyone who can affect, or is affected by, an action. Stakeholder analysis consists of the identification of stakeholders, analysis of their underlying attitudes and motivations, a determination of which stakeholders are most significant, an understanding of their networks and relationships, and the development and implementation of an engagement plan.
Social and economic profile	A process to collect relevant primary and secondary data about a community. The profile is a detailed description of the community, environment, and economy of a region and provides insight into values, priorities, and trends.
Social baseline	An appraisal of the current state of a community or social group including a consideration of trends.
Case study/comparative analysis	Detailed analysis of an example, often used to identify patterns and causal relationships. Case studies can be developed from multiple sources of information and can be supplemented by data gathering.
Cultural heritage mapping	A process for identifying and recording the meaning ascribed to landscapes by cultural groups.
Ethnography	The description of human societies, usually informed by field methods that include interviews, participant observation, and surveys.
Impact pathway analysis	A process-mapping exercise used to predict the pathway of impacts resulting from an action. The method prompts insights into the direct and indirect impacts of actions and their interaction. Also known as change mapping.
Social risk assessment	A participatory technique to identify, prioritize, and respond to the social risks and opportunities faced by an organization or communities. Through a facilitated workshop, key stakeholders determine the consequence and likelihood of each identified risk and develop controls to avoid, mitigate, or enhance priority risks. Also known as social risk and opportunity analysis.
Scenario analysis	A tool used to anticipate change under different plausible future situations. Scenario analysis assists the development of a proactive policy response through the testing of assumptions.
Trend analysis	The collection and analysis of historical and contemporary data to inform the prediction of the future.
Cost–benefit analysis	An economic technique that compares the costs and benefits, usually quantified in monetary terms, for scenarios with and without an action.
Cost-effectiveness analysis	An economic technique that compares the cost-effectiveness of alternative options for achieving an outcome. It is used to identify the alternative with the lowest direct financial cost.
Input-output analysis	An investigation of the relationships and interdependences of an economy through an analysis of the flow of resources. It considers the inputs to industry, transfers between sectors, household consumption, and the outputs of goods produced.
Choice modeling	An experimental technique used in economics to frame trade-offs between different options. The technique estimates the value of options by revealing how respondents are willing to trade them. Information is usually gathered through surveys.

and investigation of the later phases to address key issues of relevance. Cumulative impacts should be considered during this prioritization stage. Although an issue may appear acceptable when considered in isolation, the impact may have greater significance when combined with the impacts of other overlapping activities.

Future and simultaneous proposals should be considered during the scoping phase. Methods range from collation of known projects (announced, approved, or under construction) and government forecasting to industry surveys of potential future activities. Efforts to forecast potential future developments can demonstrate that the proposal is serious about (and investing in) regional futures. Issues of commercial confidentiality have been overcome in other resource provinces through the use of anonymous industry forecasting surveys, usually undertaken by a peak industry body. Such information can also help the industry negotiate with government on future infrastructure needs and priorities.

The output of the scoping phase may be the definition of the objective, scope, scale, priority issues, and terms of reference for the phases of assessment and management to follow.

Profiling and Baseline Studies

Social profiling consists of understanding the communities and stakeholders potentially impacted by the activity through social and economic research. Profiling involves analysis of the social and economic characteristics of a region at a given point of time. Baselines are an appraisal of the state of a community or social group before an activity takes place. Baseline studies provide a benchmark against which potential impacts can be anticipated and change measured. They are also valuable for building mutual understanding. The foundational

information and understandings provided by profiling are useful across all of the phases of extractive projects. Leading companies now routinely require their operations to undertake such studies and update them at regular intervals, particularly when there is any significant change to the scale or shape of a project or community. For example, Anglo American PLC has developed its own Socio-Economic Assessment Toolbox process to assist and encourage their operations to regularly review social impacts at different stages through the life of the project. Through regular review of profiles and baseline studies, or by approaching profiling as a "living" output, longitudinal trends may be observed over time and a more accurate picture of the change processes will be developed.

Knowing the community assists in anticipating how people might respond to change. Actions, even well-meaning ones, that are not socially, culturally, or environmentally grounded in the people and places (potentially) affected by a development, invariably result in poor outcomes. Understanding communities involves an analysis of their relationships and networks and the values that may shape attitudes and behaviors.

Stakeholder analysis is a common profiling technique that may be useful across a number of phases. A stakeholder is someone that has, or potentially has, an interest in an issue—any entity that is affected by, or can affect, a project. Stakeholders can be individuals, groups, neighborhoods, or organizations. Stakeholder analysis consists of the identification of stakeholders, analysis of their underlying attitudes and motivations, a determination of which stakeholders are most significant, an understanding of their networks and relationships, and the development and implementation of an engagement plan. Targeted consultations (or focused plans) may need to be developed for each stakeholder, especially vulnerable groups. Stakeholders have varying degrees of power, legitimacy, and interest in an issue or a project. They may include communities located in the vicinity of mining operations, employees, shareholders, financial institutions, indigenous peoples, nongovernmental organizations, trade unions, and governments and their departments. Stakeholders also include people within resource companies that may be important to the planning, development, and implementation of the action.

Profiling can be assisted by establishing meaningful avenues of two-way dialogue with stakeholders. Dialogue can reveal stakeholder histories and decode cultural meanings and symbols. Knowing the operations or proposed activity is a crucial, but often missing, element of profiling. This step requires an understanding of how the various elements of the proposal fit together and how the work groups involved in planning and implementation make decisions.

Profiling includes analysis of demographic patterns and trends; population characteristics; ethnicity and culture; the local economy; the labor market; land-use and ownership patterns; social and political organization; family and community organization; matters involving health, nutrition, and disease; community infrastructure and services (housing, health, childcare, etc.); expectations and concerns community members have about the project; community needs and desired futures and the capacity to meet these needs; and the vulnerability of social groups.

After a review of secondary information, and the identification of knowledge gaps, a program for the collection of primary data is developed. It is important to know the purpose for the collection of each piece of data. The accumulation of vast amounts of information of marginal use can be overwhelming and leave little time to do analytical work. Methods of primary data collection include quantitative, qualitative, participatory, and technical methods, such as interviews, focus groups, literature reviews, and surveys and case studies, among others.

Predictive Assessment and Revision of Alternatives

In this phase, likely impacts are identified and predicted, and their scale and significance evaluated, using technical and participatory methods. Impact prediction is an opportunity to analyze issues in more detail and to undertake broader consultation and engagement. A number of techniques can be used in social impact assessment to inform this phase (Table 17.4-2). The choice of methods will depend on the nature of the activity and the phase within the mining life cycle. The focus of the analysis will be informed by the prior scoping and profiling phases, and the baseline data will form a foundation for anticipating and predicting risks and impacts. Predictive assessment usually requires the collection of additional data.

Where possible, analysis should consider associated facilities, policies, or programs, such as roads, power transmission lines, and community development initiatives. Predictions should both describe how the proposed activity will contribute to the existing situation and assess the capacity of environmental and social systems to absorb impacts. The methodology and level of confidence should also be clearly explained, as well as any gaps in knowledge.

The outcomes of predictive assessment and analysis are usually prioritized by their scale and level of significance (sometimes as a matrix). They are used to provide feedback to engineers and project developers in order to modify and revise the project, as well as to enable them to decide which proposed project alternative best achieves the objectives of the project while still enhancing social outcomes and avoiding negative impacts.

As part of the trend toward integrated management systems, most mining companies have now adopted extensive risk-management processes that encompass many different elements. It is common to find consequence tables in risk-assessment procedures that include both environmental and community dimensions (Barclay et al. 2009). Social risk assessment, also known as social risk and opportunity analysis, is a technique that can be undertaken during the predictive assessment phase, but it may also be periodically employed to identify and update key social risks and opportunities, and to respond with appropriate strategies, during the impact management phases. Social risk assessments usually involve a workshop of key stakeholders (internal and/or external to the organization) and may be focused on the social risks and opportunities faced by the company or communities. The key tasks are to

1. List the potential social risks and opportunities that may affect (a) the company, and (b) the community;
2. Think about the causal factors for each of the risks/opportunities identified;
3. Make an assessment of the likelihood of the risk/opportunity occurring;
4. Make an assessment of the consequence if the risk/opportunity were to materialize;
5. Prioritize the risks and opportunities based on the assessment; and

6. Develop controls (ways to mitigate or enhance) for the most significant risks and opportunities (Evans et al. 2007).

The outcomes of such a social risk-assessment process should be captured as part of the overall "risk register" for the project. Social risks can be among the highest priority category for mining projects.

Management Strategies to Avoid, Mitigate, and Enhance Impacts

In many circumstances, there is a lack of integration between SIA and the ongoing management of social and economic issues after a project commences or after an operation closes. This can happen for many reasons. SIAs are often conducted by external consultants to serve the regulatory need for independent analysis. In such cases, there can be a lack of continuity between impact assessment and relationship development with community and stakeholders. Another possible reason for a lack of integration is that impact assessment might be the responsibility of a small team, most likely in the community relations section, whereas management requires coordination across all aspects of the operation.

It is important that the outcomes of SIA be embedded across all aspects of the business, similar to the way that health and safety have been embraced at a corporate level in recent years. Social impact management can be formalized into management systems, typified by various series of the International Organization for Standardization, site plans, agreements, development of standard operating procedures for high-risk issues, and systems to handle complaints and grievances. Examples of management procedures to address social issues include formal complaint handling systems, cultural heritage management plans, human rights and cultural awareness training (linked to human resources systems), and local sourcing and purchasing policies.

For some impacts, particularly cumulative impacts, the most effective approach may not be to target a particular impact generated from mining but to invest "off-site" to ameliorate or enhance impacts generated by other activities. At the broader level, there are four approaches to the management of impacts. These are to (1) mitigate or enhance the impacts of past and existing activities; (2) mitigate or enhance the impacts of the project or activity under consideration; (3) mitigate or enhance the impacts of potential future projects; or (4) consider whether and how these projects or activities should proceed (Duinker and Greig 2006).

This section has introduced a number of strategies for ongoing management. There is a great deal of overlap between the strategies outlined here and the practice of community relations, community development, and community engagement. The following discussion details a sample of approaches including social management plans, scenario planning, community reference groups, community development and social investments, networking and working groups, and complaints and grievance handling mechanisms.

Social Management Plans

Social management plans (also known as "environmental and social management plans," "social and labor plans" or "environmental and social action plans") summarize the findings of the impact assessment; they outline the measures adopted to enhance positive impacts and to avoid, mitigate, and (as a last resort) offset and compensate negative impacts (Franks et al. 2009b). In addition, the plans provide estimates of the timing, frequency, duration, and cost of management measures. They also establish monitoring and reporting procedures (discussed later in greater depth).

Social management plans are usually developed in partnership with regulatory agencies, investors, and the community; they identify the responsibilities of each party in the management of impacts, opportunities, and risks. Management plans also provide an opportunity to link activities with local and regional planning processes and, if developed with reference to the management plans of other operations, can assist in addressing cumulative impacts. They also provide the facility to coordinate project activities with service and infrastructure planning by government.

The plans may explicitly refer to capacity-building activities, where the institutional or community capacity to undertake such activities is lacking, and may include details of community development and social investments. Finally, social management plans outline the procedures for how social issues will be addressed in site management systems and plans, the processes for ongoing public participation and information disclosure, and the mechanisms for handling community grievances and feedback. Measures that are the responsibility of other parties are recorded and form a basis for ongoing partnerships (Franks et al. 2009b).

Scenario Planning

Scenario planning can assist organizations in preparing for unplanned activities. Scenario analysis is a tool to anticipate change under different plausible future situations. It assists the development of a proactive policy response through the testing of assumptions. If conducted with communities, scenario planning can help to inform the public of risks and manage expectations. For example, the boom-and-bust nature of the industry can increase the risk of premature or temporary closure and downsizing of operations. The effects of mine closures (where impacts are generated by the absence of activities) can be a significant challenge for regional communities and economies. Planning for closure should proceed well before an operation starts, and measures should be put in place to prepare communities and companies for such an eventuality, which will most definitely occur (however large the deposit or valuable its product).

Community Reference Groups

Community engagement is an important component of social impact management. It involves activities such as the communication of the project proposal to stakeholders; the incorporation of stakeholder views in order to modify project details; the ongoing involvement of stakeholders in community boards and reference groups; and stakeholder participation in the submission of ideas for, and implementation of, community projects.

Regardless of the form of engagement, it is important to be upfront and straightforward with stakeholders when communicating the potential impacts of a project. False impressions can distort expectations and become an ongoing point of contention and a breach of trust when the true nature of impacts becomes clear (Franks 2009).

Community reference groups provide a forum for ongoing consultation and engagement. Representation can include groups such as youth and aged organizations, local business,

tourism, health, welfare, policing, and education, in addition to environment, government, and community groups. Broad representation helps to ensure that a range of issues are covered, (although reference groups should be kept to a manageable size). For community reference groups to be at their most effective, there needs to be strong mechanisms for feedback to the broader community to provide an opportunity for input and to report on outcomes.

Community Development and Social Investments

A key strategy adopted by mining companies to manage social impacts involves programs to support community development. These may include health and education programs or support of organizations such as schools, clubs, and societies. It is important to focus and coordinate investments to target community priorities and identified needs. Community development may be prioritized by the outcomes of the scoping, profiling, and predictive assessment phases and, more importantly, through community participation. Partnerships are often the best way to facilitate local capacity-building and development programs, social services, and infrastructure (Kemp 2003, 2010). Partnerships with organizations, service providers, governments, other mining companies, and peak industry bodies can be effective in mobilizing greater resources, leveraging investments, and coordinating activities. Many mining organizations prefer an approach where community-led initiatives are supported by industry. This approach seeks to build the capacity of communities and their organizations to undertake activities and avoid overdependence on mining companies. Examples of community trusts include BHP Billiton's Minera Escondida Foundation in Chile and Rio Tinto's Coal and Allied Community Trust in Australia.

Networking and Multistakeholder Working Groups

Informal and formal networks can provide important opportunities to exchange experiences at the operational and strategic level to better manage the impacts of activities. Professional networking is an opportunity to exchange ideas and advice, as well as to communicate approaches (both successes and failures). Formal networking arrangements, such as forums of mine managers and professional staff, provide an ongoing opportunity to discuss common issues and coordinate activities. Examples include the Central Queensland Mining Rehabilitation Group, which is a forum for sharing experiences about environmental management on mine sites in central Queensland, Australia, and the Muswellbrook Mine Managers forum, which is a regular meeting between the general managers of multiple coal mines and local government in the Hunter Valley, Australia.

Multistakeholder working groups are an opportunity to facilitate partnerships around a particular goal. Working groups can share strategic information, develop and coordinate solutions, undertake research into best practice, and facilitate cross-sector communication. Multistakeholder working groups are well placed to focus on the management of social issues at a regional scale.

Complaints and Grievance Handling Mechanisms

Complaints and grievance handling mechanisms are becoming more common at the operational level within the mining industry as a means to actively respond to community concerns. A grievance is a concern, issue, or problem that is usually expressed through a complaint or protest by individuals or groups. According to Kemp and Gotzman (2009) grievance mechanisms include

- A dedicated pathway (or pathways) and processes of engagement for handling grievances;
- Procedural elements, such as a documented procedure outlining steps to be taken to handle community grievances;
- Records, such as complaints/grievance logs and data, evidence of communication about the process, and documentation of outcomes;
- Dedicated resources, such as human and financial resources, as well as formally defined responsibilities for grievance handling;
- Evidence of dialogue with aggrieved parties and/or use of alternative dispute-resolution techniques (negotiation, mediation, arbitration, etc.) where direct dialogue is not possible or has little potential (through normal channels) of leading to a resolution of issues; and
- Substantive outcomes, such as improved organizational practice and relationships, and conflict resolution (validated by aggrieved parties).

Monitoring and Reporting

The monitoring and reporting phase involves collection, analysis, and dissemination of information on social impacts, opportunities, and risks over time. This phase can (1) assist in refining assessments, (2) track the progress of social impact management approaches and identify changes needed (adaptive management), (3) assess the return that a company is getting on its community investments, (4) report to communities on how they are being impacted, and (5) facilitate an informed dialogue around these issues.

Monitoring

Social impact monitoring can be challenging for many reasons: time lags between actions and outcomes, difficulty in isolating impacts, difficulties in obtaining and comparing data, differences in the way people experience impacts, the risk of information overload for managers, and the complexity of the way impacts interact. Not all impacts can be separated and analyzed independently because they do not exist in isolation of the social and ecological context. It is important, therefore, to have ongoing points of intervention and monitoring.

Monitoring should be undertaken over meaningful time scales and spatial extent. Regional monitoring can help to address the cumulative impacts of multiple actions (Franks et al. 2009a). Monitoring should also be designed to facilitate community participation. The participation of community members can assist many aspects of monitoring, including the collection of data, participation in the development of indicator frameworks, or multistakeholder monitoring organizations. Meaningful participation can assist in building public confidence and trust in the monitoring and resolution process.

Monitoring consists of a number of discrete activities. These include the following:

1. Decide what to monitor. Prioritization can be based on community engagement and the profiling, assessment, and impact management phases. It is important to monitor outcomes, not just effort and activity.
2. Define targets, limits, and thresholds. What are the desired and undesired outcomes? Thresholds refer to

scientifically defined points where undesirable changes result if exceeded. Limits consider what may be acceptable to the community as determined through consultation and participation, with targets being designed as the desired future outcomes.
3. Select indicators. What would indicate that change is occurring or has occurred?
4. Establish measures. What data are preferred, what data are available, how will data be collected, and how often will it be collected?
5. Report and interpret data. Identify and verify trends (or nontrends), interpret trends (attribute change), and communicate results.

The collection of irrelevant information can be avoided through planning and prioritization, and the measurement load can be minimized through the appropriate design of administrative systems and the use of existing data whenever possible. Qualitative data can provide exceptionally useful information if the methodology employed is consistent and robust.

Reporting

Sustainability reporting has become a significant activity for the mining industry to communicate performance at the operational and corporate levels. Reporting consists of the documentation and communication of information on numerous activities and outcomes. In recent years there has been a trend toward standardized reporting requirements, such as the Global Reporting Initiative (GRI). The GRI is a sustainability reporting framework that requires reporting on the economic impacts on project stakeholders and systems; environmental inputs, outputs, and expenditure; labor practices; human rights; and social risks to communities. The GRI has developed, in collaboration with the International Council on Mining and Metals, a mining and metals sector supplement that details specific disclosures and indicators for the industry (GRI 2010). The Extractives Industry Transparency Initiative (EITI) is another such approach. The EITI is a global standard for transparency in oil, gas, and mining that is implemented by both businesses and governments. EITI requires industry to publish all of the payments made to governments, such as through royalties and taxes, and for governments to disclose the revenues they receive from resource developments (EITI 2009).

The documentation of social decisions and agreements (internal and external to the operations) is a key aspect of reporting that is often overlooked. The nondelivery of agreed outcomes is a salient issue at many operations. Nondelivery can create unaccounted-for future liabilities, breach trust with communities, and damage the reputation of the operation.

For some operations and issues, reporting is best addressed at a regional scale. In circumstances where multiple mining operations are located in close proximity to a single town or community, there is often an absence of information that provides a comprehensive overview of industry investments, activities, aggregate impacts, and the state of the environment. Collective reporting to the community on the economic, social, and environmental performance of the industry may be more effective at communicating the overall contribution of the industry and the totality of activities and impacts (Brereton et al. 2008; Franks et al. 2009a). Regional organizations and industry bodies are best placed to coordinate such efforts; however, the absence of a representative organization is not necessarily prohibitive.

Evaluation and Review

The final phase of social impact assessment and management is to evaluate and review the assessment and management processes. An active process of evaluation and review—and importantly, the adjustment of actions—are fundamental features of adaptive management and should be integrated into each of the previous phases. The reconciliation of impacts predicted during the assessment phase with the actual impacts experienced during implementation will assist in refining and improving future approaches. Structured review should be built into ongoing programs, policies, projects, and agreements in order to reflect contemporary conditions.

LESSONS FOR THE EFFECTIVE MANAGEMENT OF SOCIAL IMPACTS

This section summarizes key lessons that can inform mine managers, engineers, and technical professionals to effectively manage the social impacts of mining. It is important to note that communities are complex and, at times, difficult to predict, that local context is paramount, and that the transferability of approaches is often not straightforward. At the same time, consideration of these issues will assist mining professionals to design and implement projects that are more acceptable to communities and therefore have a greater prospect of success.

1. Engage with community stakeholders and build relationships through understanding and goodwill. Be upfront and straightforward about potential risks. Establish meaningful and timely avenues for two-way dialogue, and use this to understand stakeholder histories, relationships, and networks, as well as the values that shape attitudes and behaviors. Assist stakeholders to articulate community concerns and visions. Listen to and design the project or activity within the parameters of such perspectives. Be responsive and adaptive; respect customs and political and authority structures; and, where appropriate, gain informed consent.
2. Align and integrate the outcomes of assessment and monitoring into site management systems and plans. Ensure company-wide understanding and respect of community expectations, concerns, and future visions. SIA and impact management are only effective to the extent that the responsible staff and the outcomes are well integrated into the overall management of the entire operation.
3. Draw on specialist skills and social and economic research to build knowledge and understanding. The use of specialists, however, should not come at the expense of integrating understandings into the organization, nor should it confuse accountability or responsibilities. Relationships with community stakeholders are most effective when stakeholders feel the people they are dealing with have the authority to make decisions and changes.
4. Build the capacity of stakeholders. Tailor community development activities to enhance independence and postmining legacies.
5. Monitor what matters. Design monitoring in such a way that the community's concerns are identified and acted on. Acknowledge and remedy (past) issues and grievances,

and fulfill outstanding commitments. Use appropriate systems to record issues and to coordinate and deliver outcomes.
6. Continuously review activities and programs, and periodically update assessments as "living" documents.
7. Assess and manage social impacts and risks across the life cycle of mining and resource processing activities, including all of the activities from exploration through to postclosure, as well as recycling and waste management. The scale and focus of activities will vary depending on the stage, and local and operational context.

The processes of social impact assessment and impact management detailed in this chapter will assist in identifying key stakeholder issues, predicting and anticipating change, and embedding these understandings into ongoing systems and strategies to proactively respond to the consequences of mineral exploitation. Trust is an important feature of managing social impacts. Mining companies may not originate from the region, or be familiar with the local culture, customs, and lifestyles, but nevertheless they have the power to transform the environment and society. As outsiders, mining companies may be viewed with suspicion by communities and must earn community trust. Even well-meaning actions, when not socially, culturally, or environmentally relevant, may result in poor outcomes. However, by proactively responding to community issues, facilitating meaningful participation, and shaping mutually beneficial futures, mining companies can avoid conflict with communities and the associated costs.

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