CHAPTER 17.1

Community Issues

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INTRODUCTION

> The excavation, refining and shipping of this ore to
> the smelters of Japan could bring great profit over
> the next 20 years to the shareholders of Rio Tinto–
> Zinc—at the cost of damage to the physical, social
> and spiritual well-being of Bougainville, which,
> until the mine came, was a peaceful and prosperous
> island. Moreover there is a danger that arguments
> over the ownership of the mine could cause political
> strife, even civil war, in this part of the South Pacific
> (West 1972).

In 1989, following a series of increasingly violent pro-
tests that included sabotage of power supplies and attacks on
mine workers, Bougainville Copper Ltd. evacuated its work
force from the Panguna mine located on Bougainville Island in
Papua New Guinea. The operation was shut down at relatively
short notice, with most equipment left in place, and has not
operated since. In the year prior to the shutdown, Bougainville
Copper was capitalized at US$1.5 billion (Humphreys 2000),
and the operation represented one of the world's largest open-
pit mines. In the ensuing years, the civil unrest developed to
a full-scale conflict between the Bougainville Revolutionary
Army and the Papua New Guinea Defence Force that dev-
astated the island, with several thousand deaths and approxi-
mately 50,000 people (a third of the island's population)
displaced from their homes (Regan 2001). A peace process
that commenced in 1998 between the government and local
communities has returned some calm to the island, but the
events that surround the abandoned Panguna mine remain
the most vivid and tragic example of community conflict sur-
rounding a major mining operation.

The underlying causes of the conflict that erupted on the
island were many and complex: they included ethnic differ-
ences and the emergence of a secessionist movement prior to
the transition of Papua New Guinea from Australian admin-
istration to full independence in 1975. The mine became a
catalyst, with community concerns about the distribution
of economic benefits and the environmental impacts of
mine waste on the local river system featuring prominently.
According to Denoon (2000), for many of the landowners
"Panguna was a social, economic and environmental disaster,
and a spur to militant protest."

Mines and the communities they are associated with have
always been inextricably linked via a complex network of
relationships and issues such as these. Local community mem-
bers usually form part of the work force at a mining operation,
while others in the area supply goods and services. At the same
time, individuals, families, and sometimes whole communities
can be displaced by the development of a mining lease, while
some may be affected by environmental impacts associated
with an operation. Community livelihoods can be impacted
both directly by land-use changes, and also by changes within
local social structures. While safety standards in the industry
have improved significantly in most areas, there is a history of
workplace accidents and health issues that remains an impor-
tant factor in the relationship between mining companies,
work force, and communities. In some locations, operations
can be in competition with parts of the community for scarce
resources such as productive land and/or water. In others,
mining companies are welcomed as an agent of development
that can bring infrastructure, essential services, and economic
opportunities to a region. In most cases there is a continuum
of views held about proposed or existing mining operations.

The balancing of the benefits and costs of mining opera-
tions for local and regional communities has attracted debate
for centuries: "Thus it is said, it is clear to all that there is
greater detriment from mining than the value of the metals
which the mining produces" (Agricola 1556). While Agricola
himself went on to staunchly argue the case for the 16th-
century mining industry, others have taken more critical posi-
tions when considering modern operations. Notwithstanding
the resilience and intrinsic strengths of some mine-affected
communities for dealing with changes and transformations
brought about by mining, there are often power disparities
between mines and many remote, rural, and/or indigenous
communities (e.g., Banerjee 2001). Compared to companies,

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communities usually have more limited access to information, knowledge, technology, and capital that can be leveraged to shape the nature and pace of mining development. Such disparities have been the primary driver for the increasing involvement of rights-based nongovernmental organizations (NGOs) that have seen international campaigns launched against companies or particular projects when grievances escalate. The boom/bust nature of the industry adds another dimension to the debate about whether mining brings positive or negative change, with mining's contribution to development challenged by "resource curse" theories.

In short, the issues associated with interactions between mining companies and communities have become more prominent, and have increasingly required more attention from those associated with managing resource companies and mineral operations. Those working in the industry are increasingly required to respond to "community issues" in ways that their predecessors were never expected to. It is also likely that many technical staff who get involved in social aspects of mining have little training or prior experience in these issues. The purpose of this chapter is to provide an introduction to the types of social and community issues involved with mining, and the contexts in which they could emerge. It explores what is meant by the term *community*, and also reviews how community issues have increasingly been investigated in the last 20 years, particularly through projects such as the Global Mining Initiative (GMI). Subsequent sections explore more systematically the contextual factors that influence community relationships, and also the types of impacts that attract most attention. More detailed chapters follow this overview and address specific themes in more detail, including indigenous peoples and mining projects, and specific processes to assess and manage social impacts.

WHAT IS "COMMUNITY"?

The concept of "community" is usually used in the minerals industry to describe those who live in the geographic region of an operation, either in defined settlements or dispersed settings. However, there are other equally valid ways to consider the term, especially as modern industry practice has moved to include a greater incidence of fly-in/fly-out arrangements whereby workers and their families live in a distant location. Another relevant example is where traditional owners of the land associated with the mining development have maintained their links to the land but reside elsewhere. In such cases, community impacts can occur many hundreds of miles from an operation. Mining projects often include transport infrastructure and supply chains that span large distances, connecting networks of mines, processing centers, and ports, significantly increasing the range and types of other potential community impacts. There are also many different definitions of community that are not geographically based, such as communities of practice and spiritual communities. However, the mining industry tends to emphasize physicality and proximity to an operation, either spatially or by issue. Leading industry practice acknowledges that communities are complex, evolving, political, and heterogeneous entities (DITR 2006). In 2005, the Australian Ministerial Council on Mineral and Petroleum Resources (MCMPR) defined community as

> a group of people living in a particular area or region. In mining industry terms, community is generally applied to the inhabitants of immediate and

surrounding areas who are affected by a company's activities.

The term *local* or *host* community is usually applied to those living in the immediate vicinity of an operation, being indigenous or nonindigenous people, who may have cultural affinity, claim, or direct ownership of an area in which a company has an interest.

Affected community refers to the members of the community affected by a company's activities. The effects are most commonly social (resettlement, changed services such as education and health), economic (compensation, job prospects, creation of local wealth), environmental, and political.

A community is usually a diverse group of people with some common bonds. Diversity can come in the form of gender, ethnicity, religion, race, age, economic or social status, wealth, education, language, class, or caste. As a result, members of any community are likely to hold diverse opinions about a mining operation and its activities, as well as most other subjects. As mentioned earlier, individuals within a community will have different and sometimes overlapping associations with the mine as neighbors, employees, suppliers, and so on. It is not uncommon for disagreement and sometimes conflict to develop between different sections of a community in relation to mining operations. To different degrees, conflict will also exist within a community prior to the start of mining, from low-level tension to violent conflict. Some companies choose to operate in conflict or postconflict zones, which will involve yet another layer of complexity to the process of understanding the local community.

More recently, the term *stakeholder* has become a common term that is related to but distinct from *community*. The idea that business has responsibilities broader than its traditional role of generating a return for shareholders is reflected in stakeholder theory, popularized by Freeman (1984) in his seminal work, *Strategic Management: A Stakeholder Approach*. This theory holds that successful companies recognize that they have responsibilities to *stakeholders*, a term referring to any individual or groups who can affect or are affected by a corporation's activities (and where corporate responsibility extends beyond maximizing a financial return to shareholders). Stakeholder theory has not only been a powerful force in academic circles in terms of developing its own research tradition, but also in encouraging the corporate sector to see community concerns and aspirations as key considerations.

A common definition of stakeholders is "those who have an interest in a particular decision, either as individuals or representatives of a group. This includes people who influence a decision, or can influence it, as well as those affected by it" (MCMPR 2005).

Stakeholders might therefore include local community members, NGOs, governments, shareholders, and employees. The use of the term *stakeholder* has been contested on the basis that some communities are in fact *rights holders*—a stronger term than stakeholder—due to rights defined by relevant national or state law. For example, indigenous peoples in Australia with a recognized claim to an area have the right to negotiate under the Native Title Act (Commonwealth of Australia 1993). While local communities are usually viewed as key stakeholders, the potential range of all stakeholders is considerably broader. Both terms are relevant to the discussion that will occur in the next few chapters, although the

main focus will be on the narrower group of "community" as outlined in its definition.

MINING AND SUSTAINABLE DEVELOPMENT

The increased focus on the mineral industry's impact on the environment and society, including the local community, can be attributed to both global trends associated with attitudes to private enterprise and large multinational corporations, and also to the mineral industry's poor track record with high-profile cases such as the Bougainville crisis and various other environmental incidents (e.g., Ok Tedi in Papua New Guinea, Marcopper in the Philippines, and Baia Mare in Romania). During the 1990s the minerals industry came under increasing challenge from various quarters, with the result that it found itself losing its "social license to operate." This term has now become a popular way of describing the influence that society in general has over the ability of an organization to carry out its activities, above and beyond the legal license issued by governments, which govern the extraction of mineral resources. Social license is variously described but commonly considered an ongoing process of approval from the community that is given at a point in time, and not necessarily for the future (AccountAbility 2004).

In response to this increased societal pressure, there were several early initiatives in different countries as local industry bodies sought to engage with both governments and their critics. One example is the Whitehorse Mining Initiative in Canada (Cooney 2008), a multistakeholder initiative developed in 1994 involving industry, government, and NGOs, which aimed to develop general principles for responsible mining. In Australia the Minerals Council of Australia developed the Australian Minerals Industry Code for Environmental Management, modified in the late 1990s to include additional requirements focusing on social and community issues. These types of initiatives were often linked to the concept of sustainable development, a term that has emerged over the last 20 years as a key organizing framework for the global community to consider the links between the development and environmental protection agendas. Dresner (2008) outlines both the history and the politics of this process, including key milestones such as the Brundtland report (WCED 1987) and the United Nations Rio Earth Summit in 1992. Sustainable development remains a contested concept, with many competing definitions and sets of principles, but its popularity has meant that many organizations have chosen to use it to frame their own activities in social and environmental areas.

In 1998, a dialogue between a small group of senior mining industry CEOs including Hugh Morgan of Western Mining Corporation and Sir Robert Wilson from Rio Tinto led to the formation of the GMI, an industry-led process that expanded to involve many of the world's largest mining companies. The initiative had three elements: a 3-year research project to investigate the activities of the industry through the lens of sustainable development; a major conference held in Toronto in 2002 to review the outcomes of the project; and the creation of a new global industry body, the International Council on Mining and Metals (ICMM), charged with implementation of the industry response to the outcomes of the project. The Mining, Minerals and Sustainable Development (MMSD) research project was managed by an independent research group, the International Institute for Environment and Development,

and resulted in the *Breaking New Ground* report produced in 2002 in time for the Toronto conference (IIED 2002). It is beyond the scope of this chapter to explore the full range of issues covered by the MMSD report (many are touched on in other chapters in this handbook), but it is noteworthy that one of the nine key challenges identified for the industry to address was the area of mines and communities. A number of supporting research reports addressed specific issues under this theme such as indigenous peoples' rights, social impact analysis, and socioeconomic development. Danielson (2006) provides a comprehensive account of the origins and progress of the MMSD project, including a range of different stakeholder perspectives on various elements of the process. There is little doubt that the GMI and its associated research has been the most influential process to date of all those designed to examine the social and environmental aspects of mining industry activities.

In reviewing the progress and outcomes of both the Whitehorse Mining Initiative and the GMI, Cooney (2008) suggested that the companies who launched the two initiatives were primarily concerned about the public image of mining. Public criticism was being driven by misinformation about the actual impacts of mining, and improved communication would help address this. However, he suggested that through the course of both initiatives and subsequent processes such as the World Bank's *Extractive Industries Review*,

> the mining industry learned matters both of process and of substance: from the engagement process, mining companies have learned different models of comprehensive dialogue and consensus building with critics; by listening to their critics, the companies have learned different approaches to analyzing and managing critical issues. Self-education was not the mining industry's initial purpose in either the Whitehorse Mining Initiative or the Global Mining Initiative, but it was to be the outcome.

In addition to these industry-driven initiatives, many other stakeholder groups have initiated reviews and developed frameworks for reviewing environmental and social aspects of projects, some specific to the resources sector but others more generally focused. Such nonregulatory drivers are pushing minerals companies to focus on local-level social and community issues. Particularly for publicly listed companies, the screening process for socially responsible investment or ethical investment funds, other indexes such as the Dow Jones Sustainability Index, and public ratings are also influencing behavior. Most of these indexes and rating agencies require that organizations establish a systematic approach to managing the social dimensions of their projects, as they would environmental and economic aspects. Many funding agencies, such as the International Finance Corporation (IFC) also require this as a condition of finance. In the absence of mandatory legislation, pressure from third parties has helped to sustain attention on community relations in the mining industry. This growth of "soft" regulation has been significant in the past 10 years—examples that are relevant and referenced by the minerals industry include the following:

- **ICMM Sustainable Development Framework**—Ten principles and various elements that provide guidance on applying sustainable development principles to mineral

operations. Reporting against this framework is obligatory for members of the ICMM.

- **Kimberley Process Certification Scheme**—A multi-stakeholder initiative that aims to provide product certification for diamonds and reduce the trade in "blood diamonds."
- **Extractive Industries Transparency Initiative**—A voluntary initiative focused on ensuring transparency of payments associated with resource projects.
- **Equator Principles**—A set of environmental and social benchmarks developed by a group of major international banks for addressing environmental and social issues in development project finance.
- **IFC Environmental and Social Standards**—A standards framework developed by the IFC to apply to projects in which they invest World Bank funds.

As well as pressure from this type of "soft" regulation to improve social and environmental performance, many governments are becoming increasingly involved in regulating the community aspects of the development, operation, and closure of mines (Brereton 2002). The focus of governments was initially on environmental issues, but social dimensions are increasingly being regulated in developed and developing countries alike. In Australia, for example, most states have made basic community consultation mandatory for major new development projects, including mining, often as part of environmental and social impact assessments. The Australian Native Title Act (AustLII 1993) has also become a central part of the Australian regulatory regime, providing indigenous groups with the right to negotiate and a potential vehicle to deliver both social and economic benefits for indigenous communities. South Africa has a regulatory framework in place to progress black economic empowerment in the mining and petroleum industries. The Philippine Mining Act of 1995 requires that proposed projects undergo a comprehensive environmental assessment, which must consider socioeconomic as well as environmental impacts and provide evidence of broad social acceptability. In Canada, the requirement to incorporate sustainability considerations in environmental assessment processes has seen community issues come to the fore in several high profile and controversial mining cases such as the Voisey's Bay project, as described by Gibson (2006), and the more recent Kemess North review.

CONTEXT IS CRUCIAL

Before considering some examples of the types of community issues that emerge, it is important to emphasize the influence and importance of context. Many factors can have a significant impact on the interactions and relationships between mining operations and communities, including various social and political aspects, as well as the stage of the mining life cycle involved. Mining is a truly global activity, involving many different types of organizations and communities in settings that range from arid mountains in parts of the Andes, to remote areas within the Arctic Circle, to established agricultural regions in developed countries, and to tropical rainforest settings in developing economies in Asia. In addition to the obvious geographical differences, other contextual factors can be very important.

The history of mining in a country and region can influence community attitudes to mining projects. In some cases mining may be a relatively well-accepted activity, as, for example, in certain well-developed coal-mining areas of the United States and Australia. A number of well-known mining towns around the world have been created close to major mining deposits whose economies continue to be based around the exploitation of these resources. Examples include Kalgoorlie in Australia, Sudbury in Canada, and Cerro de Pasco in Peru. However, in some of these areas, the cumulative and historical social and environmental impacts associated with the mining operations can still be the subject of community debate. As the industry increases its activities in less-developed countries with little or no experience of large-scale mining, community attitudes can vary widely. A good example is Mongolia, which has only recently opened its industry to direct foreign investment. Large-scale mining by global companies is a new phenomenon, and the management of mineral revenues was the principal issue in the 2009 election held in that country.

Existing community land uses can include broad-scale farming, intensive agriculture, open grazing of livestock, and hunting and fishing (among many others). Although the physical footprint of mining operations is usually relatively low, its interaction with other land uses in terms of impacts on other resources such as water, labor, and infrastructure can be significant. In some locations, small-scale or artisanal mining (particularly of gemstones and precious metals) may already be a significant community activity—some estimates put the number of people involved in this type of mining worldwide as high as 20 million, including large numbers of women and children. In this sense, the displacement of artisanal activities by large-scale mining projects can have significant negative ramifications for certain groups of people. By the same token, mining companies have worked with artisanal mining communities to address health and environmental issues and to find opportunities for artisanal miners to find alternative sources of income.

In many parts of the world, elements of the physical landscape play an important role in the culture of local communities. A desert clay pan may represent a physical feature to be managed by a mining company, but it is a significant site to a local indigenous community. In some parts of Australia, red ochre is used by male members of indigenous groups in cultural ceremonies, and therefore its presence in mine overburden becomes a major logistical issue that requires an appropriate response. There are cases where the development of mining projects has resulted in the destruction of sites of major cultural significance, such as at the Argyle mine in Western Australia, for example. There are also cases where the presence of such sites have been the main reason for mining projects not going ahead, and some sites where mining projects have been designed to accommodate cultural heritage considerations.

Political and legal frameworks within a country will have a significant impact on the scale and nature of the mining industry and can also often be the subject of intense community focus. Government capacity to regulate the minerals industry and manage the benefits of mining for the local communities has been identified as a crucial aspect by recent studies (e.g., ICMM 2006) and has been the subject of recent World Bank projects in several developing countries, such as through the provision of technical assistance to the government in Laos and other countries in Asia to strengthen their ability to manage the burgeoning mining sector. Also of interest are legal and customary rights concerning land management, especially in cases where mining occurs on lands

claimed by indigenous peoples. In Papua New Guinea, there is a well-developed system of customary land ownership that is linked to family descent, whereas in some parts of Africa communal tribal ownership and shared land-use arrangements make negotiations for land access for mining purposes considerably more complex. All around the world, many rural or traditional communities have operated on a system of land use and ownership that has not required formal land ownership. If a company compensates only those people with formal land ownership, there is a high potential that it will negatively affect livelihoods, culture, and social traditions that have been in place for generations. Where land titles are in place, it is also men who often hold title and receive compensation for land, highlighting the potential for women to be negatively impacted unless strategies are in place to ensure equitable distribution of benefits.

Other important contextual factors include the nature and scale of the mining operation itself. Large-scale open-pit and strip mines can result in more visible manifestations of mining activity in the form of spoil piles and waste dumps and can be more disruptive to other land uses such as agriculture. Underground mines generally employ more selective mining methods and produce less waste, but subsidence effects in longwall mines can result in impacts on surface environments and water resources. In some countries, the safety record of underground mining is significantly worse than surface mines, as, for example, in the underground coal industry in China (which includes many smaller, informal operations), where the reported fatalities in 2007 from a series of methane and dust explosions and cave-ins numbered nearly 3,800. It is believed that many fatalities and injuries go unreported in China and other countries.

The nature, size, and reputation of the company involved can also be influential. The larger global multinational companies tend to be engaged in the sustainable development debate and signatories to many of the frameworks and conventions that deal with community issues, whereas many of the smaller mining and exploration companies are less active in these areas. Size does not, however, always correspond to enhanced social performance. Not all operations within a large company perform to the same standard. Small or junior companies with a single asset may find creative ways to work with the local community to address social concerns, although they usually have significantly less capacity to adequately resource a community relations function and therefore do not always give social aspects the attention that is warranted. Smaller companies can also have a short-term outlook, as their focus is on discovering and developing the asset to the extent they can sell it, rather than operating the mine themselves. This tends to lead to an avoidance of social investment. Whether a company is from the country of origin can also determine the extent of community opposition. In several parts of the world, there has been community opposition to the involvement of foreign companies in mining and exporting valuable minerals when much of the profit is perceived to go offshore.

Finally, the stage of the mining life cycle can also have a significant bearing on the development of community issues. Some issues are specific to certain phases. For example, the impacts associated with accessing hitherto virgin jungle for the purposes of exploration or with a community hosting a large, temporary construction work force are very different from those that occur during actual mining operations. Closure is often associated with community concerns over the

withdrawal of the mining work force and related economic activity. Some closures are planned, where the mine comes to a natural end because the resource has been exhausted, but other mines close suddenly because of changes in commodity prices, which means the mine becomes unprofitable. Mines can also be disrupted or closed because of community protest or conflict, as in the case of Bougainville discussed earlier. Community issues are not fixed; they evolve throughout the life of the operation.

Consider the example of Newmont Waihi Gold's mine located in Waihi, New Zealand, shown in Figure 17.1-1. At this historic mining town, the conversion of old underground workings into an open-pit development during the 1980s has brought the upper benches of the mine to within feet of residences and the town's main street. Although mining has been an activity in the area for more than 100 years, the impacts associated with the mine have affected many residents living close to the edge of the pit, and also the community more broadly. The community relations landscape has been dominated by these issues of amenity, including the impacts of noise, dust, and blast vibrations. However, there are many other contextual issues that also influence how the community perceives and interacts with the operation. The mine and its work force make up about 25% of the town's economy, with many local people employed at the operation. The development of the open pit removed a small hill that was of cultural significance to some Maori tribes of the area, who continue to oppose the presence of the mine on the basis of their traditional beliefs and values but remain in discussion with the company on the management of cultural issues. The mine operates in a developed country with strong environmental protection legislation, and is located in a farming area close to a major tourist region. Recently, the company worked with the community to develop a vision for the town after mine closure, which has been imminent for the past few years, and it is the potential closure of the operation and its impacts that are the current focus for many in the community. A good understanding of the overall context—economic, cultural, political, social, and environmental—as well as an understanding of the issues particular to each community and each group within the community, is therefore crucial in identifying and addressing the many issues that emerge from the closure process.

What Are Community Issues?

The introduction of the term *triple bottom line* (Elkington 1997) and its application in the context of sustainability reporting has seen social or community issues identified as a separate category to environmental or economic issues within the sustainable development framework. In reality, however, most communities are extremely focused on all aspects of mining development and do not necessarily separate out these issues into neat categories. Consider a remote traditional community that relies on the local waterway for catching fish as well as for spiritual worship and ceremony. They may explain the water as important to their survival, their traditions, their family, and their future, seeing these aspects as interconnected rather than separating them. Although there are different ways of understanding these dynamics, it is often environmental or economic aspects that are the main focus of attention. Figure 17.1-2, while not intended to be comprehensive, illustrates both the breadth of issues under consideration and their interrelated nature.

Courtesy of Newmont Waihi Gold.

Figure 17.1-1 Newmont Waihi Gold's operation in Waihi, New Zealand

Some themes have become particularly prominent in the last decade, partly as a result of such initiatives as the MMSD project but also due to a range of other drivers. Some of these have been mentioned previously, such as nascent "social regulation" in the form of legislation, voluntary initiatives, and pressure from NGOs and civil society. In recent years some investment funds have been deliberately disinvested from major companies in the minerals industry because of concerns about social risk. Several of these issues, which have become the focus of various groups and organizations, are explored briefly in the following sections.

Economic Development
The positive influence of mining projects on local, regional, and national economies has always been an argument used by proponents to support new developments. In contrast, the resource curse hypothesis suggests that in fact countries with high levels of natural resources suffer lower rates of economic growth than those with more diversified economies, in effect suffering a paradox of plenty. Much research supports arguments both for and against this proposition, one example being the Resource Endowment Initiative involving the ICMM, the United Nations Conference on Trade and Development, and the World Bank (ICMM 2006). This study concluded that mining investment does provide opportunities for economic growth, poverty reduction, and engagement in the global economy, pointing to specific examples such as Chile and Botswana where increased mining investment has coincided with an upturn in national economic growth. However, it also emphasized the need for effective and transparent governance regimes for the management of mineral wealth. Transfer of some of the benefits from taxes and royalty streams back to the regions where mines are located has been an issue of some contention in several countries such as Peru, for example, where several problems have developed as a result of changes to legislation (Arellano-Yanguas 2008).

In recent years more research has been focused on economic impacts at the local and regional levels. Companies are now starting to report on how much of the added value associated with wages and purchase of goods and services for mining operations stays at the local and regional levels. For example, see the economic indicators in the *Sustainability Reporting Guidelines and Mining and Metals Sector Supplement* (Global

Reporting Initiative 2009). In addition, a company's contribution to community development activities are directed at growing local economic activity, often with a focus on non-mining-related businesses, in order to provide for a postclosure future. However, the additional cash flows injected into local economies can have negative impacts as well, as in the form of disproportionate inflation, for example. This can apply equally in less-developed contexts where market economies may be significantly changed by the introduction of mining industry wages, as well as developed economies where industry expansions can result in distortions in real estate and labor markets, with consequential impacts for other sections of the community.

Water and Mining
Access to fresh water represents an essential human need. Water is also fundamental to other ecosystem services required to sustain human life and is high on the political agendas of all levels of government, including the United Nations. It was recognized as a key theme in the MMSD project, with mines operating in the driest and the wettest regions on the planet. While not extracting as large a quantity of water as the agricultural sector in most countries, individual mines are often large consumers in their local context, and their impacts can be significant. Mining companies compete for water use within a range of market and nonmarket jurisdictions, and can often afford to pay considerably more than others, thereby running the risk of reducing the viability of other industries. Companies can also affect access to water if mining development does not consider the usage patterns of the local community. For example, by building roads or operations, some mining developments can inadvertently make access to water sources in developing countries more difficult. At the same time, mining companies are often responsible for developing water infrastructure used by other industries and communities (e.g., Brereton and Parmenter 2006).

Water use in many processing activities results in bodies of contaminated water in tailings storages and flooded pits that, if incorrectly managed, pose risks for downstream users. Many environmental legacies of mining have involved pollution of water systems, including the frequent incidence of acid mine drainage at closed or abandoned mines on many continents. Potential impacts of mining operations on both the quantity and quality of surface and groundwater resources are increasingly being raised as concerns by local communities, and in several cases have been the principal reason why some projects have not gone ahead.

Community Health
There are many ways in which mining operations can impact the area of community health. Population changes including in-migration in developing countries such as Papua New Guinea can be responsible for the spread of diseases such as human immunodeficiency virus (HIV) and tuberculosis. The ICMM recently released a report titled *Good Practice Guidance on HIV/AIDS, TB and Malaria* (ICMM 2008) for its members, reflecting the incidence of HIV in mining work forces and communities in different parts of the world. Other direct health impacts can come from emissions from processing operations, such as high blood lead levels found in communities located near older lead smelters on several continents. Local controversies have developed over the potential health impacts of riverine and marine tailings disposal processes
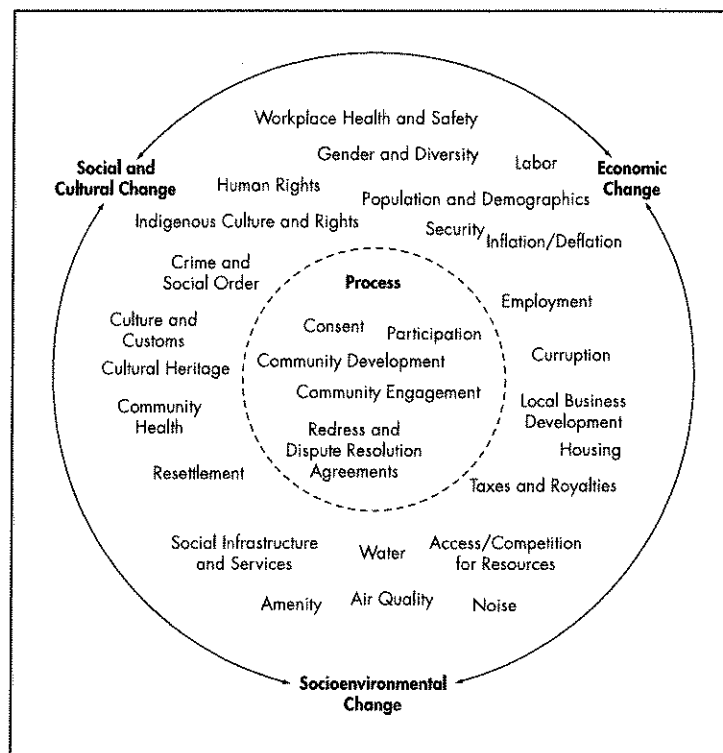
Figure 17.1-2 Examples of community issues in mining

such as those at Marinduque in the Philippines and Minahasa in Indonesia, for example. Both of these cases attracted significant international attention.

On the other hand, mining developments are often responsible for the establishment of health infrastructure and services in remote areas. Despite the environmental impacts associated with riverine waste and tailings disposal at the Ok Tedi mine in Papua New Guinea, the antimalarial and health clinic campaign introduced by the company to isolated communities near the mine resulted in extremely significant improvements in infant mortality and life expectancy statistics in those areas. A mining company–initiated campaign to eliminate filariasis from the island of Misima in the same country realized similarly impressive results, and there are many examples in Africa of similar involvement in regional antimalarial campaigns. While such initiatives at one level represent a risk reduction measure for the company's own work force, they often extend well beyond the level required for pure mitigation.

Resettlement and In-Migration
Mining often requires or results in movements of people, either out of or into a mining area. When minerals are located where people are living, resettlement is often required in order for the resource to be exploited. Resettlement may involve one family or a whole community. The IFC's resettlement standard has, by default, set the industry standard for resettlement. Aside from physical resettlement, mining can result in social, economic, and cultural dislocation, often stemming from physical resettlement, but not necessarily. For example, a haul road may inadvertently divide an otherwise connected group of people, or may impact access to resources such as

productive land or water. But while it may serve to dislocate in some instances, a new road can also increase people's mobility and access to new markets for expanded economic opportunity, although these opportunities may not be experienced across the board.

There is a vigorous debate around whether mining companies should ever undertake resettlement involuntarily. There are some sites where communities have been involuntarily settled in the past, and as a result harbor resentment, particularly when relocation was facilitated by force or violence. In some cases, new owners have been faced with legacy issues from prior resettlement that cannot be ignored. While some communities are moved to enable resource extraction, there are other circumstances that result in migration into an area as a result of people seeking economic benefit through direct or indirect employment or other business opportunities, sometimes known as the honey pot effect. In-migration can be just as challenging for a company as resettlement, particularly if it is uncontrolled. Often companies expect governments to take responsibility for community planning around mine settlements or squatter camps, which, if not done adequately, can often cause great resentment.

Security and Human Rights
Human rights discourse has recently grown in strength, as have calls for business, and in particular multinational companies, to ensure that their activities do not harm the rights of others. The key international reference for human rights is the Bill of Rights, which includes the United Nations' Universal Declaration of Human Rights, proclaimed in 1948 by the UN General Assembly, and the two covenants—the International

Covenant on Civil and Political Rights, and the International Covenant on Economic, Social and Cultural Rights. As elements of the bill are ratified by governments, not companies, it has not been clear how human rights responsibilities confer to companies, particularly those operating on a transnational basis, including whether and how companies should be held accountable for their actions should they abuse human rights. The nature of global businesses has meant that it is often difficult to apply home country laws to companies operating abroad, although there have been attempts in both Canada and Australia to introduce legislation that specifically focuses on mining companies in this area. Further, the laws of some host countries may not have enshrined human rights into law, or may have weak or ineffective legislative frameworks that fail to hold companies to account for human rights violations. While the debate about the human rights responsibilities of companies continues, a recent report from the UN special representative of the secretary-general clarified the different yet complementary roles of governments and companies with respect to human rights (Ruggie 2008). The three-part framework outlines three key principles: the state duty to protect, the corporate responsibility to respect, and access to remedies. Under the recently extended mandate, "operationalizing" the framework will gain particular attention.

In the mining industry, human rights are most often raised in the context of the use of security forces to protect mining operations, which has been particularly controversial in militarized regions. Safety and working conditions have also been the subject of intense scrutiny. Attention is also being called to the human rights issues associated with environmental impacts, particularly if mines impact on the ability of local communities to establish sustainable livelihoods, as well as a number of other rights-related impacts, such as on culture (e.g., if sacred sites are impacted by mining activities), discrimination in the workplace, and the right to an adequate standard of living. While attention is often called to the negative impacts that mines have on local communities, it also needs to be recognized that companies help uphold a variety of human rights in their day-to-day business. Their contribution to economic growth, for example, can provide the support necessary for fulfillments of various economic, social, and cultural rights. Responsible mitigation of environmental impacts, close consultation with local communities, and employment procedures also help uphold different sorts of rights (ICMM 2009).

Mining, like many other economic activities, has often been conducted with little regard to the rights and interests of indigenous peoples on whose lands resources were located. Over the last few decades, indigenous peoples have been recognized as a distinct category of human societies under international law and, to varying degrees, in national law as well. The adoption in 2007 of the United Nations Declaration on the Rights of Indigenous Peoples has brought a sharper focus to this area. Harms that indigenous peoples suffer as a consequence of poor practices have included dispossession and forced relocation, destruction of culturally significant sites, loss of livelihoods, exposure to disease and "social vices" such as alcohol and prostitution, and in extreme cases, total cultural and social breakdown. It is vitally important that the rights of indigenous peoples are taken into account in any mining project. However, as human rights assessments are not yet common in the industry, particularly those that are publicly disclosed, the degree to which companies respect or otherwise impact human rights—indigenous or otherwise—is not always clear.

COMMUNITY ENGAGEMENT AND DEVELOPMENT

The common terminology for the processes undertaken by mining companies to understand and address community issues include both *community engagement* and *community development*. Community engagement is usually undertaken so that the company can better understand community perspectives. Community engagement is increasingly required by legislation, most commonly as part of project approval processes. It can also be undertaken voluntarily, as part of developing good relationships with local or host communities. Community engagement is not new in the sense that mining companies have always interacted with a range of groups around mining operations. However, in recent times, the focal point and rationale for community engagement has increasingly fallen under the banner of sustainable development and been linked to a broader range of issues than previously considered.

Community development is focused on the needs and aspirations of the community. Community development is concerned with issues of social justice, human rights, and empowerment of all groups in a community, including the most vulnerable. Community development can contribute to the management of the social impacts of a mining project, but this is not the core focus. Effective engagement is essential for community development, but community development does not automatically flow from engagement. The mining industry tends to present community development as a "mature" form of stakeholder engagement practice. A common reference in this area is the spectrum of public participation developed by the International Association for Public Participation (IAP2 2009), which shows a progression from informing and consulting to collaboration and empowerment of local communities. Under this model, community development is "high end" participation compared with public relations, which focuses more on corporate reputation through formal communication and information dissemination.

There are several stages of mine life, from exploration and project development to construction, extraction operations, and closure. In different ways, depending on the context, community engagement and development is important and relevant. Exploration is important in terms of establishing early relationships. This stage sets the scene for the future. By the time project development commences, there should have been sustained dialogue between the company and the community, various studies and assessments undertaken to determine potential impacts and benefits that might occur, and strategies for either impact mitigation or maximization discussed and agreed. The construction phase can result in significant changes and impacts to local communities. Regular dialogue remains important in these phases. It is often only after operations commence that profits are reaped and significant money starts to flow. Community development often becomes a central focus at this point, but the foundations for good development are ideally laid from the very beginning of the project life cycle. Closure and postclosure considerations should be discussed from the very outset. If community development has succeeded, a community will be well placed to deal with the changes that closure may bring.

The mining industry tends to use community development to describe activities undertaken directly or indirectly with communities in the geographic proximity of operations

that aim to achieve positive economic, environmental, and/or social outcomes for those communities. Some companies also use terms such as *community programs, community support,* and *social investment.* The sphere of activity varies from site to site, depending on the context, size of operation, commodity, impact of the operation, and various social and political expectations. Activities typically included in sustainability reports under community development tend to include local employment (direct or indirect through the supply of goods and services), training and skills development, provision of infrastructure (such as roads, water, and sanitation facilities), service delivery (such as health and education), employee volunteerism, donations, and nonmining-related opportunities (such as capacity building and empowerment programs). However, it is often not the activities themselves that denote community development, but the processes used. An employment program can serve company goals, but if community-directed and empowering, it can also meet the needs and aspirations of the local community. Process is key to successful community development.

Of particular interest to this chapter is the increasing alignment of various mining companies with the international development and poverty agenda as expressed, for example, by the CEO of Anglo American Corporation at a mining industry conference in South Africa: "Mining companies are not development agencies, but we are important development actors.... I believe that the mining sector will—and must—play an increasingly important role in development and poverty alleviation in the continent" (Carroll 2008). Several multinational mining companies have publicly aligned themselves to the Millenium Development Goals, a set of ambitious targets released by the United Nations to address pressing global development needs. This move toward community development is unsurprising, given that mining companies increasingly operate in some of the poorest and most marginalized communities of the world. Many of the world's leading companies, particularly those operating within a sustainable development framework, are becoming involved in the provision of infrastructure and services, such as for health and education, and economic opportunities through compensation, royalties, direct or indirect employment, and small business enterprise, as well as initiating capacity building and other community development programs. However, while the core business of mining can have adverse impacts, so too can development projects initiated to secure social license to operate, and companies should always analyze the potential for perverse consequences of development projects, including the issue of community dependency.

ADDRESSING COMMUNITY ISSUES

As a testament to the increasing voice that society has over company affairs, and the continued emphasis on the social aspects of mining, in 2009 Newmont Mining Corporation released a major community relationships review. This was undertaken in response to a shareholder resolution at its 2007 annual general meeting put forward by Christian Brothers Investment Services Inc., endorsed by the board, and supported by almost 92% of shareholders. The aims of the review were defined as follows:

- To better understand Newmont's current community relationships and their contexts;

- To assess future risks and opportunities to Newmont with regard to these relationships;
- To analyze the relevance and effectiveness of Newmont's policies, systems, and controls as they relate to community relationships; and
- To identify the impact of resources, capacity and governance on the implementation of these policies and controls (Newmont Mining Corporation 2009).

The project was undertaken by an independent working group and reviewed by an external advisory panel whose members included some who had been publicly critical of the industry's approach to dealing with communities. It was designed around case studies of five Newmont operating sites located in different continents and with vastly different contexts. In reviewing the final report, the Environment and Social Responsibility Board Committee commented on the project outcomes:

> The Company has learned much about the need to foster and maintain good relationships with governments, communities and other stakeholders, not just the ones who support the Company in its mining ventures, but also those who object to mining in general or the Company in particular. We firmly believe that the future viability and sustainability of the Company's business requires that the Company manage our community relationships more effectively and with consistency. The Company must ensure that community engagement, community relations and conflict management become a more integral component of the Company's business (Newmont Mining Corporation 2009).

In responding to the emerging agenda around mines and communities, the industry has made some significant changes at a number of levels, including both policy and planning activities to address community issues. Typically, corporate policies of leading companies in the minerals industry now explicitly address a range of broader social justice objectives, which include such aspects as local and indigenous employment, security and human rights, sustainable livelihoods, culture and heritage, ethical procurement, and stakeholder and/ or community consultation. Increasingly, these policies are focused not only on mitigating the negative impacts of mining on the environment and people, but also on delivering sustainable benefits for local and regional communities. However, "good deeds" undertaken in one area in order to maximize benefits does not compensate for social harms. At a minimum, companies must focus on avoiding or mitigating social harm that occurs as a result of their activities.

At the level of process, there is a growing emphasis on the need to adopt a more participatory and inclusive approach to interacting with stakeholders, including local communities. In order to achieve this, there are a series of essential processes that should be undertaken from the outset and repeated throughout the mine life, including inclusive engagement and relationship building, social mapping and baseline studies, social impact assessment, and social risk assessment and community planning. These processes are explored in more detail in a subsequent chapter. In an effort to improve their performance in community relations, some minerals companies

are now investing considerable resources in developing and implementing management systems for this area. This entails adaptation and extension of the approach being taken in other dimensions of sustainable development, such as occupational health and safety and environmental management. The elements of these systems typically include an annual planning process, detailed documentation of procedures, regular reviews and audits against defined corporate standards, and a strong focus on information management. Examples that illustrate the "systematization" of community issues include cultural awareness protocols and training, and procedures for managing community complaints or grievances.

Structural arrangements for community relations vary according to contextual and organizational factors. Some operations include community relations departments within the communications, public relations, or external affairs functions, whereas others position community relations as part of the environmental or sustainable development departments. Many large mine sites, particularly those in developing countries or where there is a large indigenous population, have dedicated community development units or departments. Some companies detach or semidetach community development through a dedicated foundation or trust. At the corporate level, there is often a senior executive or separate department that has responsibility for social policy, as well as a board subcommittee in the area of sustainable development or social and environmental policy.

There are no known studies, either regionally or globally, that provide a comprehensive profile of organizational arrangements for community work within the global minerals industry. A notable contribution, however, was a study undertaken by Reichardt and Moshoeshoe (2003) that considered the structural arrangements and capacity for sustainable and community development undertaken in the context of the African mining industry. In the Australian context, a practitioner survey undertaken by Kemp (2004) found that people involved in community relations work were generally well educated and had considerable industry experience, but the majority did not hold qualifications in the social sciences. In addition, the group had a low level of prior experience in community relations–type work, either within or outside the industry. Subsequent anecdotal evidence suggests that the industry has recently targeted people with social science backgrounds from sectors such as international development, aid, social services, and community development while also building the social science and relational capacities of those from technical or operational backgrounds (Kemp 2009). The policy, structural, recruitment, and professional development arrangements outlined above speak to an ever-increasing focus on the institutionalization and professionalization of community relations in mining.

SUMMARY

Although many of the issues explored in this chapter are not new to the industry, and indeed have been the subject of public debate for decades, there is no doubt that the focus on community issues in mining has increased substantially in recent years. There are many reasons for this, some of which have been identified earlier, but in general the change does reflect an underlying shift in societal attitudes toward business and society, and the extractives industry in particular. For those working in the industry, it means that significant attention needs to be paid to this area, and not just by those working in dedicated community roles. In particular, engineers should recognize the diversity and complexity of communities, rather than viewing them as a collective entity: understand the direct and indirect ways in which mining operations impact communities; and appreciate the significance of contextual and cultural factors that might affect community responses to mining activities. They should also understand that the nature of community issues will change over the life cycle of a project, and they should appreciate the need for early and continuous engagement with the communities associated with their operations.

The mining industry has, to a great extent, accepted aspects of the moral arguments being made in this area. The industry also appears to be persuaded that investing in community relations activities to address these types of issues makes good business sense. A former chief economist for Rio Tinto identified two main sets of business case arguments, which he termed "show-stopping pressures" and "competitive pressures" (Humphreys 2000). The former includes disruptions and delays to projects that threaten their existence, while the latter focuses on the desire to be the "developer of choice" and the ability to move faster in the project establishment process. However, in the same paper the author adopted a less-instrumental argument: "How companies behave reflects underlying currents in the value systems of the world in which they operate. They and their employees are not something apart from civil society. They are an integral part of it and, as such, need to be sensitive to changes in its priorities and perceptions." The maintenance of the industry's "social license to operate" has become an imperative in an increasingly connected and challenging global environment.

The Panguna mine on Bougainville referred to at the beginning of this chapter has not operated since 1989. There have been suggestions in recent years that some in the local communities would like to investigate the possibility of reopening the mine. Other landowners remain bitterly opposed because of the environmental and social legacies left by the operation and subsequent conflict. As in many other locations, the possibility of using the economic benefits of resource development to provide opportunities for local communities remains attractive. Amidst the complexity, one thing is clear—in negotiating the future of any renewed mining activity on the island, the approach taken by mining companies, governments, and local stakeholders in addressing "community issues" will need to be very different from the past. To be successful, mining companies must reflect a better understanding of the needs, aspirations, strengths, and perspectives of local communities and focus on these social aspects as much as on the engineering design of any new mining proposal.

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