



Mining, Minerals and  
Sustainable Development

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## Part III: Challenges

# Chapter 8 Minerals and Economic Development



International  
Institute for  
Environment and  
Development



World Business Council for  
Sustainable Development

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# Chapter 8: Minerals and Economic Development

<i>Mineral Production and National Economic Development</i>	4
External Market Forces	6
Internal Economic Stresses	8
Political Economy	9
<i>Capturing Mineral Wealth</i>	9
<i>Managing and Distributing Mineral Wealth</i>	15
Distributing Wealth	15
Life After Mining	17
Coping with Resource Depletion	18
<i>Corruption</i>	18
Mining and Corruption	19
International Action Against Corruption	20
Fighting Corruption at Home	21
<i>Protecting and Promoting Human Rights</i>	23
Security Forces	25
Labour Rights and the Repression of Trade Unions	26
‘Pariah’ States	26
A Fresh Commitment to Human Rights	27
<i>The Impact of Armed Conflict</i>	28
<i>The Way Forward</i>	31
Attracting Investment	31
Global Markets	31
Managing and Distributing Mineral Wealth	31
Transparency in the Management of Mineral Wealth	32
Combating Corruption	33
Promoting and Protecting Human Rights	33
Preventing Armed Conflict	33

Realizing the potential for mining to contribute to development in poor countries is arguably one of the greatest priorities facing the mining and minerals sector. Recent events such as protests against globalization in Seattle and Genoa and the immigration pressures faced by countries like the US and Europe have brought home the real potential for discord and conflict created by massive wealth disparity between industrial and developing countries.

Mining should bring extensive economic benefits. This is particularly important for poor countries and regions that lack alternative sources of development and are otherwise unattractive to foreign investors. Provided certain conditions are met – such as an appropriate legal and policy framework, an adequate level of political stability, and well-defined property rights – foreign investors are likely to be drawn to rich mineral deposits.

In the last decade, a great deal has been done to establish enabling frameworks for mineral investment, particularly in developing countries. Much of this is due to the World Bank. This has resulted in a substantial flow of investment, creating new opportunities as well as challenges. The opportunities include hard-currency earnings in economies where they are scarce, increased government revenues, improved education and skills development, and the development of infrastructure such as roads, electricity, and telecommunications.

But, for a number of reasons, many countries have failed to capitalize on the opportunities brought by mining. The ability to manage mineral wealth effectively has lagged behind the ability to attract mineral investment. A key challenge now is for countries to develop policy frameworks to ensure that mineral wealth is captured and creates lasting benefits for local communities and the broader population. This framework must recognize that production from a specific mineral deposit has a finite life span; when the mine closes, it is vital that there is something to show for it in the form of improved stocks of other forms of capital.

A further challenge is for producer countries to be able to maximize the value-added from minerals. In particular, developing countries must be provided with more opportunities to do so. Markets that welcome primary products must not discriminate against products that have been further processed in the exporting country.

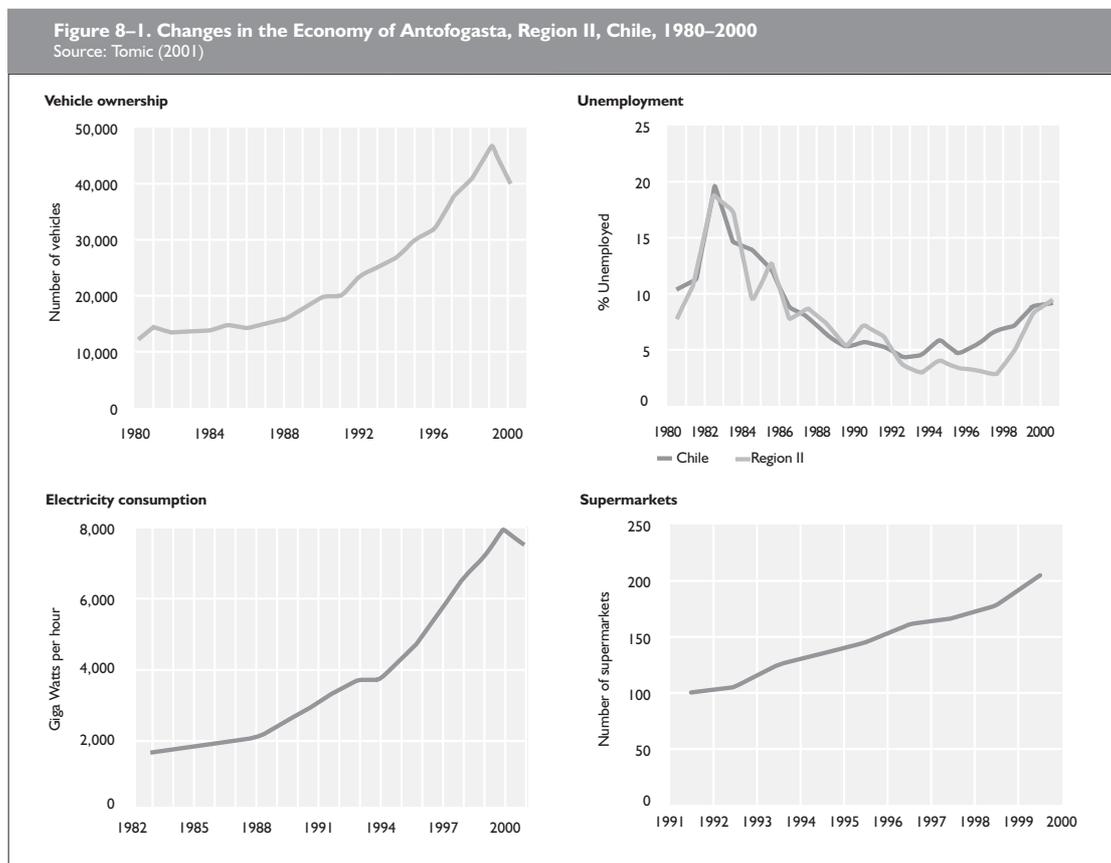
Minerals development creates power for those who share in it – and potentially competition for access to it. This may have a corrosive effect on social and political life (sometimes associated with corruption and human rights abuses) and can exacerbate unresolved social tensions, including issues of national versus local authority. The policy framework must provide the means to ensure that various rights and interests are respected and to resolve conflicts when they arise.

This chapter examines these issues more closely – looking at the economic impact of mining at the national level and at the steps governments, industry, and civil society can take to ensure that mining and minerals development contribute to equitable and sustainable human development.

# Mineral Production and National Economic Development

Many of the world's richest countries have benefited greatly from minerals extraction. Australia, Canada, Finland, Sweden, and the United States, for example, have all had extensive minerals industries and used them as a platform for broad-based industrial development.<sup>1</sup> By any standards, these are now some of the world's most successful economies: in 2001 all five were among the top 10 countries in the Human Development Index prepared by the United Nations Development Programme (UNDP).<sup>2</sup> Moreover, in these countries minerals development seems by at least some measures to have brought benefits specifically to regions with mines. In nineteenth-century Australia, for instance, mineral exploitation brought development to the states of Victoria and Western Australia.

In more recent years, a number of developing countries can also point to minerals-led development. It is often the case that such countries are trying to leapfrog the development process and the development of governance structures in short periods of 10 to 30 years. Chile, whose copper production accounts for 35% of world output, is now among the group of 'high human development' countries (ranked 39th by UNDP).<sup>3</sup> Here, too, many of the rewards have been reaped locally: the mining capital of Antofagasta is relatively prosperous and in recent years unemployment has been falling despite the arrival of immigrants from other regions. (See Figure 8–1.) Africa can also provide positive examples: one of the most successful mining countries has been Botswana, a major producer of gem diamonds that has also had one of the world's highest economic growth rates – averaging 9% annually in 1996–99.<sup>4</sup> But some other countries with mineral development seem to have been considerably less successful.



There are a number of ways of deciding which countries qualify as ‘mineral economies’: minerals output can be set against gross domestic product (GDP), or the dependence of foreign-exchange earnings on mineral exports can be considered.<sup>5</sup> (See Chapter 2.) In 34 nations, mainly developing and transitional economies, mineral exports of metals, ores, and fuels (including oil) represented 25% or more of total merchandise exports in 1999.<sup>6</sup> Another indication of minerals dependency is the proportion of government revenue that comes from mining. Some countries derive 30–50% of their fiscal income from a single company.

Whatever measure is used, a review of economies with significant mineral development finds countries at both the top and the bottom of UNDP’s Human Development Index. Mineral wealth is clearly not a sufficient condition for successful economic development. Nor is it even a necessary one: many of the world’s most successful countries in recent decades, including the newly industrializing countries of East and South-east Asia, have had few mineral deposits. If managed effectively, however, the minerals sector has the potential to play an important role in national and local economic development.

How should a country expect to gain from the minerals sector? One of the most immediate ways should be through additional employment – both direct and indirect. Mining activity should also generate new infrastructure such as roads, railway lines, electricity supplies, schools, and hospitals that, although provided for the minerals industry and its work-force, can also benefit the rest of the population. At the local level, it should contribute to the development of skills and local businesses. Meanwhile the economy as a whole can be stimulated as minerals industries forge multiple outward linkages – backwards to industries that supply goods and services, or forwards to industries that process mineral outputs. World Bank studies of mining activities around the world suggest that every dollar that a company spends on a mine generates another US\$2.80 elsewhere in the economy.<sup>7</sup> Finally, there are more general economic benefits, including injections of hard currency that strengthen the balance of payments, along with royalty payments and corporate taxes that boost government revenues.

These and other potential benefits are by no means automatic, however. Any country that wishes to translate mineral wealth in the ground into human development for its people faces stiff challenges. These include:

- creating and sustaining mineral wealth while protecting environmental quality and other social and cultural values;
- sharing the surpluses or economic rents from mineral production equitably among different levels of government, local communities, and mining companies;
- converting non-renewable resources (mineral wealth) into renewable ones by investing in physical and human capital, and doing so in a way that also helps protect the interests of future generations;
- maintaining a stable economic environment while coping with the exchange-rate impact of mineral exports, fluctuating international commodity prices, and the demands for structural adjustment; and
- dealing with the impact of the mining sector on crucial issues of governance, in particular corruption, regional tensions over how revenue is shared, and human rights.

These challenges are discussed at length later in this chapter.

Why do many countries seem to have fallen short of realizing the economic development potential of minerals production? There are three main schools of thought. The first blames external market forces – and more specifically, volatile or low commodity prices. The second emphasizes internal economic stresses, arguing that a large natural resource base can cause the economy to veer off in one direction and destabilize or damage other sectors. The third argues that windfall mineral revenues tend to distort processes of economic decision-making and also foster the kind of corruption that undermines political and social institutions.

### **External Market Forces**

World prices for mineral products have unquestionably fallen relative to the prices of manufactured goods over the past two decades. Some economists have argued that this was not inevitable – that the declines of recent years resulted from a number of random shocks and thus do not indicate a consistent, predictable trend.<sup>8</sup> Others, however, suggest that mineral prices dropped when production costs fell as a result of technological innovation.<sup>9</sup> If mining companies are selling fungible products on commodity exchanges, there is scant room to compete by offering better or innovative products. Instead, companies have little choice but to focus on being low-cost producers – by seeking operational improvements at existing operations, undertaking grassroots exploration in search of high-quality deposits, acquiring developed properties during the bottom of the mineral-price cycle, and carrying out research and development to improve production processes.

There is a related possibility that deserves some exploration. As new low-cost producers come on the market, or as older mines retool to lower costs, economic analysis would predict an exodus of mines at the other end of the curve – the high-cost, marginal producers. While this certainly does occur to some extent, the exit of high-cost or unprofitable producers tends to be slowed, perhaps for three reasons.

First, particularly where mining is an important employer and there are few alternatives, governments do not want to deal with the social and political fallout from closing mines, and therefore find ways to subsidize them. Bolivia, Ukraine, Serbia, and the United Kingdom are a few countries where miners threatened with layoffs have had a destabilizing effect on politics. In such circumstances, governments use subsidies to deflect the problems and many of the subsidies continue years after they became established. Sometimes they even extend to taking over mines and running them as state enterprises when private companies are no longer willing to keep them open. Examples of overt subsidies include everything from the Romanian government's years of subsidies, which finally had to be abandoned when the government ran out of money, to the current conditions in the former East Germany, the Chilean mines at Lota, and the Bolivian government's years of support of unprofitable tin mines.<sup>10</sup> Examples of covert subsidies are even more numerous.

Second, for multinational companies with reputations to protect – or a desire not to alienate host-country governments – it may no longer be possible simply to 'pull out' of communities without making some provision for the work force and the social, economic, and environmental dislocations associated with closure. Particularly where there has been little attention to rehabilitation or stabilization of the mine site during operations, the environmental costs of closure alone may tempt companies to stay in operation much

longer than a current revenues versus current costs analysis might dictate. There is also always a reluctance to close because it may be hard to reopen if prices improve tomorrow. Companies therefore may internally subsidize unprofitable mines.

And third, where miners have no alternative employment, they keep mining even when mines close – formally, as in the cooperatives of Bolivia, or informally, even for minimum returns. They are therefore subsidizing production with their unpaid or only partly paid labour.

For a number of commodities, this combination of new low-cost producers and older, higher-cost producers lingering on under one form of subsidy or another may be part of the explanation for what seem to be constantly falling prices. This important issue needs additional research attention: if reluctance to bear the environmental, social, and other costs of closure and consequent overcapacity in the industry is part of the reason for dismal world mineral prices, there could be few issues more important for everyone in the sector to understand. The question of ‘terminal costs’ – what they are, who should pay them, and their role in a number of the industry’s current problems – is considered throughout this report.

The other commodity price issue is volatility. Since the collapse of the Bretton Woods exchange rate system in the 1970s, the prices for minerals have been more volatile than those for manufactured goods. This can cause problems for mining companies, which find it more difficult to commit themselves to a steady programme of investment; for employees, whose future is rendered insecure; and for governments, whose budgets depend on taxation and rent from the minerals sector. Unpredictable prices also add to a general air of uncertainty that can discourage investment and hamper long-term economic growth.

That is the theory, anyway. Is it borne out in practice? The evidence is mixed. The World Bank says that this has not been the experience of sub-Saharan Africa, and a 1995 study found no relationship between terms-of-trade volatility and economic growth.<sup>11</sup> Other studies, however, suggest that uncertainty in commodity prices may indeed reduce economic growth – though the effects can be offset by good public policy and judicious use of foreign aid.

Governments can do little to influence unstable world commodity prices. Although a number of mineral-producing countries have in the past banded together with commodity agreements in attempts to stabilize world prices, these efforts have had little success.

Volatility need not necessarily lead to instability if, for example, governments smooth out the variations in income using commodity loans, perhaps, or derivative-market hedges, though the consequences of poorly supervised officials engaging in sophisticated and risky commodities futures plays with public moneys need to be considered before there is a rush to such solutions.<sup>12</sup> Another option is to establish a mineral revenue stabilization fund. When prices are high, the government can accumulate reserves here and draw on them when prices are lower.<sup>13</sup> In theory, such a fund – if insulated from political pressures – could stabilize foreign-exchange expenditures or government spending and could help dampen the oscillation of real exchange rates. Chile, for instance, has established stabilization funds for copper and petroleum as a buffer against external price shocks.<sup>14</sup>

Botswana and Papua New Guinea (PNG) also have funds. Though the Chilean fund appears to have functioned well, the current evidence only relates to short-term effects. Much less is known and understood about mechanisms for long-term stabilization – an area that requires further research. Assuming that governments are confident about their ability to cope with price fluctuations, they should be able to extend this steadying influence to producers, particularly small- and medium-sized ones, by guaranteeing a local floor price for their output.<sup>15</sup>

Governments can also plan for volatility on the expenditure side. They would be less exposed, for example, if they made conservative forecasts of future income and matched this with stable and predictable growth in public expenditures. Too often, for political reasons, forecasts are far too optimistic. Another option, which echoes the principle of a mineral stabilization fund, is to separate mineral revenues from other revenues and release them for spending at a steady rate.<sup>16</sup>

### **Internal Economic Stresses**

Another difficulty for mineral economies is that a booming natural resource export sector can squeeze out other industries. In the Netherlands, for example, in the 1960s and 1970s a sudden increase in natural gas exports seemed to damage traditional export sectors, notably manufacturing and agriculture. What came to be known as the ‘Dutch disease’ also appears subsequently to have affected other primary commodity producers in the 1970s and 1980s.<sup>17</sup>

The damage can be done in two main ways. First, buoyant resource industries can bid up the prices for labour and other inputs. This harms traditional export industries – their costs increase but they are unable to recoup these by raising prices, since the latter are set by world markets. (Other parts of the economy may not suffer so much. Indeed, service industries may even benefit; not only can they offset cost increases by national price increases, but they can also gather more business by providing services to the expanding export industries.) Second, natural resource exports can also damage traditional exports through the exchange rate: if booming exports cause the currency to appreciate, this too renders other exports less competitive.

Some of these stresses are inevitable in economies undergoing structural changes. Market economies constantly evolve as some sectors expand while others contract. And there need be no overall reduction of economic growth if the gains from minerals exports more than offset the losses experienced elsewhere. The effects may be felt most where governments respond to political pressure and intervene to protect vulnerable industries. This can lead to a general misallocation of resources – including tariffs, quotas, or other restrictions that will render the country less open to international trade. And the damage can be compounded if the boom in mineral exports is temporary and the country is subsequently unable to restart traditional export industries.

Some economists argue that even successfully adjusting away from manufacturing and towards minerals exports is likely to be disadvantageous in the long term. This is because minerals production may take place in an ‘economic enclave’ – with fewer linkages to the rest of the economy than normal manufacturing industries. In contrast to manufacturing, mining operations necessarily have a finite life span. It is also argued that the mining

industry may also be less likely to exchange personnel with other industries, as the skills gained in mining are less transferable. As a result, though minerals production might create more profits in the short term, in the long term manufacturing can offer better growth prospects.<sup>18</sup> Nevertheless, much of this is theoretical speculation; the empirical evidence is far from conclusive. On the issue of backward and forward linkages, for example, some minerals producers indeed work in enclaves, but others may be quite well integrated with the rest of the economy. On the skills issue, there is little evidence that natural-resource-dependent economies have lower human capital accumulation than resource-poor countries.<sup>19</sup>

## **Political Economy**

The third main reason put forward for the poor performance of some mineral economies is that the distortions caused by a sudden flow of mineral wealth can erode the integrity of national institutions. Some of this takes place through corruption (as discussed later in this chapter). But the arrival of mineral wealth can also cause more general shifts in economic power and influence that make the economy work less efficiently. Thus a newly rich mineral elite may use political and economic clout to fend off initiatives that work against its interests, such as using the tax revenue from mineral wealth to invest in human development or provide government support for export-oriented manufacturing. It is important to realize that disputes over mineral wealth between the central government and provinces or local communities can also be disputes over which ethnic group dominates politically. In the extreme, where there is poor governance and an inability to resolve these internal conflicts effectively, mineral revenues can be the spark that sets off open conflict, and that can then be used to buy the arms to fuel it.

Another possibility is that mineral earnings can prop up inefficient governments. Some may use this money to repress dissent; others to buy off important interest groups – all of which narrows the options for political and economic change. Of course, many resource-rich states are poorly managed – suffering from ill-defined property rights, mispricing of inputs and products, poor investment decisions, wasteful spending, and a general lack of accountability. But they are hardly unique in this respect; many other countries have similar failings, and such outcomes are by no means inevitable.

## **Capturing Mineral Wealth**

Clearly the existence of mineral deposits is no guarantee of economic development. Whether deposits turn out to be a blessing or a curse will largely depend on governments – on the quality of their institutions, on their capacity to manage these resources well and use them to catalyse development, and on their interactions with companies, civil society, and other actors.

How much should government attempt to control mineral extraction? People in many developing countries view a mineral endowment as a finite and exhaustible ‘national patrimony’ and regard it as their duty to capture as much direct benefit or ‘economic rent’ as possible before reserves run out. In the 1960s and 1970s, some governments tried to maximize their incomes through higher taxes and royalties and by limiting the repatriation

of profits. They also imposed various controls on what the corporations could import or export, and required that companies employ a certain proportion of national staff. When this did not yield the desired results, there were mandatory joint ventures with national companies, caps on the percentage of foreign ownership, and ultimately either ‘creeping nationalization’ through imposition of ever more burdensome requirements or even outright state seizure, sometimes followed by attempts at compensation.

By the 1980s, however, it was clear that some of these measures were not bringing the desired results. Some state mining companies, rather than contributing to the national budget, became a drain, as subsidies were required to keep them afloat. Many governments acknowledged that state ownership and public-sector management were failing to deliver anticipated social and economic benefits, and that over-regulation was discouraging investment. The 1980s also saw the onset of economic liberalization generally and a greater belief that the best option was to allow the private sector to take the lead in spearheading development. Encouraged by the World Bank and other institutions, many countries started to reform minerals sector policies. (See Table 8–1.)

<b>Table 8–1. Mining Sector Reforms Advocated by the World Bank (continued)</b>	
<b>From</b>	<b>Towards</b>
<b>Legal Reform</b>	
Access to Mineral Resources: Restrictive and hostile regimes to foreign and private investment ...	... an open sector with the same rules for all, grounded in the Constitution and defined by statute.
Limited access to mineral resources due to extensive state holdings ...	... free access to land for mineral resources development based on first come first served principle.
Security of Mining Title: Uncertain transition between exploration and mining licenses ...	... a guaranteed right for the mineral resource finder to obtain mining license.
A restrictive right to transfer exploration and mining licenses ...	... free transferability without prior approval from the government.
Environmental Responsibilities: Lack of concern about environmental and social impacts ...	... clear, consistent, and realistic environmental protection and social mitigation policies reflected in modern legislation and standards.
Marketing and Foreign Exchange : High barriers to imports and exports of mineral products and profit repatriation ...	... marketing and foreign exchange freedoms.
<b>Institutional Reform</b>	
Ministry/Department of Mines: A role of the state as owner and producer of mineral products ...	... a role as administrator/ regulator coordinating with other government agencies to assure policy consistency.
Mining Cadastre Office: A discretionary and opaque mining title registry largely serving the needs of state owned companies...	...to a transparent and efficient computerized licensing function with public registry and realistic budgets.
Geological Survey Institution: A focus on detailed mineral exploration	...to a focus on regional scientific and technical information with an open access policy to disseminate the information widely at nominal cost.

**Table 8–1. Mining Sector Reforms Advocated by the World Bank**

Mining Environmental Office: Lack of institutional attention to the environment	...the development of base line environmental information, sector specific technical norms and guidelines.
State Owned Enterprise: Creating losses stemming from economic and technical inefficiencies and uncontrolled pollution of the environment	...the restructuring and privatization of viable operations and the orderly closure of uneconomic ones and the application of environmental regulations equally to all.
Institutional Capacity: Demoralized, underpaid, and under-trained staff, unsupported by logistical resources	...invigorated staff, trained in sector specifics, with better logistical support (even though still often underpaid).
<b>Fiscal Reform</b>	
An input and output based taxation regime	...one based on profitability.
A taxation regime providing exemptions and holidays	...one providing accounting rules adapted to the characteristics of the industry.
A mining taxation regime written into project specific agreements	...a mining taxation regime written into a tax and/or a mining code.
An investment environment without a clear growth strategy and disconnected from the international business practice	...an investment climate that protects the interests of the country while addressing the investors 'and financiers 'concerns.
An exclusive fiscal relation between mining company and central government	...an acknowledgment of interests and needs of local communities to share in project benefits.

Source: Van der Veen (2000).

In their desire to attract investors, some governments have exempted mining companies from future environmental regulation or have guaranteed fixed taxes. The Argentine National Mining Agreement, for instance, binds both the national government and the provinces not to raise most taxes on the industry for up to 30 years. In some cases governments have formalized these incentives through 'stabilization agreements' – committing themselves not to impose any new tax, royalty, environmental law, or any other regulatory burden that did not exist at the time of the investment.

Over the past decade, more than 100 countries have introduced new regulatory regimes. These clearly have had some effect: foreign direct investment (FDI) in mining has been growing at a respectable pace in recent decades, albeit somewhat slower than FDI as a whole.<sup>20</sup>

Not everyone accepts that this is the right approach, however – warning that countries that relax controls over mining are in danger of sacrificing social and environmental objectives. In the minerals sector, as elsewhere, there is the danger of countries competing with each other in a 'race to the bottom' – jeopardizing the prospects for sustainable development and for maintaining intergenerational equity.<sup>21</sup> Some argue that over time this approach works to the benefit of richer nations and the detriment of poorer ones. There is a clear need for a much more explicit understanding of where the boundary is between giving investors confidence that they will be fairly treated and not subject to some sort of regulatory confiscation, and the potential surrender of sovereignty by governments – a line that should not be crossed.

On the other hand, it is argued that standards in developing countries have actually been improving to be more closely in line with industrial-country standards. Second, many mining companies point out that it is not in their long-term interest to invest in countries with no or minimal social and environmental standards, since that increases political risk.

How, then, can governments maximize the benefits from foreign investment while minimizing social and environmental costs? One of the most important ways is for them to develop a clear policy and regulatory framework for the creation and management of mineral wealth. This should be developed through the widest possible participation, ensuring that policies reflect the interests of all stakeholders.<sup>22</sup> Governments should in theory be able to enshrine such requirements in legislation on environmental and social issues and on the plans and agreements reached by different parties – demanding that companies engage in prior consultation and also provide information in a clear and accessible form. They should also be able to help negotiate between mining companies and local communities. But there is clearly a long way to go: few mining-sector structural reforms have established proper mechanisms to give local people a say in how mining activities are carried out or to enable them to partake of the benefits.

Governments should also take other steps to make the most of the gain from private-sector mining. In addition to providing companies with sufficient geological information to encourage exploration, governments should aim for a non-distorting policy environment and should set mineral and other policies that define the conditions under which exploration, development, and mining occur – including land use and environmental rules.

One of the most basic issues is the division of the ‘resource rents’ between the host country and foreign investors. Governments want to maximize the income from a finite natural resource. Mining companies, on the other hand, often argue that really there is little rent to capture – that international competition and price pressures drive their margins so low that they can scarcely make a profit.

Many of the crucial decisions centre on taxation – as governments attempt to gain an adequate share of the rents from mining without setting taxes so high that they scare off investors.<sup>23</sup> Where does the threshold of deterrence lie? One study of more than 20 countries concluded that companies are unlikely to invest if the net effective tax rate exceeds 60%.<sup>24</sup> Some governments, particular where the reserves are exceptionally rich, take considerably more: the government of Botswana, for one, is thought to retain up to 75% of the revenue from diamond mining.<sup>25</sup>

Such suggestions may give some indication of what might be desirable or feasible, but policy-makers will not be able to fall back on a generally applicable model. Instead they will have to base their decisions on local circumstances and priorities. Each country has a distinct view about the ownership of mineral rights, for example, as well as its own understanding of what constitutes fairness or equity. There are also differing views about what constitutes a fair share of rents between companies and governments.

Setting taxes high – using a intricate regime that reflects the interests of many stakeholders and takes the environment into account – may seem like the best way to maximize revenue, economic growth, and employment. But if this discourages corporations from investing or

tempts them to evade payment, it could ultimately deliver less than a simpler regime would. If there is one lesson to be learned from creative tax and concession legislation, it is that no matter how it is disguised or characterized, the government 'take' is just that – funds going to government – and that above a certain level this will ward off investors no matter how it is formulated.

Over the years, governments have developed a range of methods of taxing the minerals sector. The two principal forms are corporate taxes and royalty payments. Developing countries as a whole derive around 80% of their mineral revenues from taxes on corporate profits.<sup>26</sup> This approach has the advantage of allowing the government to reap the benefits from profitable projects, but it also exposes the government to some of the risk, since no profits means no income. Although governments may choose to levy a standard corporate tax across all sectors, many also specifically set higher rates for minerals companies.

If the state owns the mineral rights to the land, the government may choose to charge royalties as compensation for the depletion of its assets – based on either the quantity of minerals extracted or their value. It may require these payments as periodic instalments, it may sell or auction the mineral rights at the outset, or it may use a complex combination of these methods. Governments may prefer royalties, as these provide a rapid flow of revenue, but they can lose out in the longer term if royalties discourage companies from developing marginal resources or cause them to close mines early. Foreign mining companies, on the other hand, prefer to avoid royalty payments because of the effect on their taxes in their home countries – for tax purposes, royalties are a deductible rather than a creditable item.<sup>27</sup> Governments, too, seem to be turning against royalties: over the past century they have been moving towards profits-based taxes: Chile, Peru, and Zimbabwe, for example, do not charge royalties.<sup>28</sup>

Although corporate taxes and royalties offer the main taxation routes, there are many others, such as minimum taxes (used in Mexico and Indonesia), additional profits taxes (Mexico and Ghana), capital gains taxes (Indonesia), withholding taxes (Indonesia and all of SADC), and import/export duties or taxes (Indonesia), as well fuel taxes (most countries). Most countries also levy payroll taxes and various types of registration fee and stamp duties, along with different types of surface rentals, land use fees, and value-added taxes. Companies may also have to pay taxes locally, in the form of property taxes on the mine, perhaps, or via a surtax calculated as a proportion of the taxes paid to the central government.<sup>29</sup>

Governments and corporations of course have many other financial links. Some of the most controversial involve subsidies. In an effort to attract investment, many governments offer mining companies cheap or subsidized use of land, water, and energy. Under the 1872 US Mining Law, mineral claimants have access to federal land for an annual holding fee of US\$100 per claim. If their application for title to mineral rights is subsequently approved, they pay US\$2.50 or US\$5 per acre, with no payments for minerals extracted beyond normal corporate taxes, and end up as outright owners of the land. Whether this is an appropriate policy is the centre of an intense and ongoing debate in the US. For some, the government is underpricing mineral resources and creating a subsidy or a 'perverse incentive' that stimulates a higher-than-optimal level of production, which in turn has a greater environmental impact. They propose a variety of royalties or other payments to

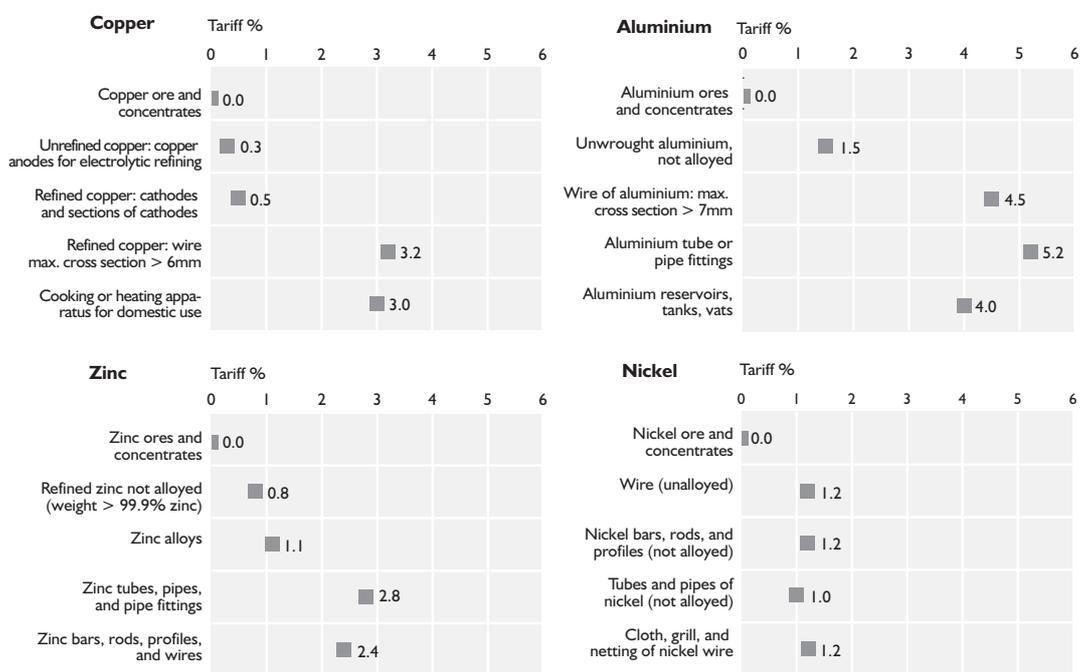
insure that the government receives a higher share of the presumed economic rent. Others, on the other hand, argue that the government's total 'take' from overall taxation of mining companies in the US is not lower than the world norm, and that there is neither a subsidy nor a resultant overproduction. They also point out that the US environmental regime, whatever its flaws, is more stringent than in many other parts of the world.

Countries can increase the benefits they derive from their mineral resources through capturing more of the value-added of mineral production. To some extent this will be governed by the principle of comparative advantage. However, industrial-country governments could assist mineral economies to do more processing themselves by reducing the tariffs imposed on the import of manufactured goods. (See Box 8–1.)

### Box 8–1. Tariff Barriers Impeding Industrial Development in Minerals Countries

Mineral-dependent states that want to progress to higher-value production could do so by carrying out more of the processing on their own territory. But they soon run into obstacles embedded in the world trade regime.<sup>a</sup> (See Figures below.) Although industrial countries are happy to import unprocessed minerals – such as aluminium, copper, lead, nickel, tin, and zinc – they take a very different attitude towards manufactured goods. If the same metals have been transformed into electrical wiring, say, or pots and pans, industrial countries they may be subject to tariff and non-tariff barriers. In general, the more processed the goods are, the higher the tariff.

#### Trade Tariffs in the Value Chain of Internationally Traded Metals



Data represent the mean import tariff for the European Union, US, Canada, Japan and Australia.

Source: UN Conference on Trade and Development, Trade Analysis and Information System (TRAINS)

<sup>a</sup> Oxfam America (2001)

## Managing and Distributing Mineral Wealth

Governments that expand their mineral production rapidly also have to cope with the effects in other parts of the economy. If they are not careful they may find themselves suffering from some of the worst symptoms of the ‘Dutch disease’ described earlier. The important thing here is to make a realistic assessment of the prospects for minerals exploitation. If minerals have significant long-term prospects, the government may well choose to make long-term adjustments to the economy on the assumption that workers will have to move away from more traditional export industries. Nevertheless, they can also ease the pain of transition by using mineral revenues temporarily to support the currency or to provide retraining for displaced workers.

The extent to which mining operations benefit local communities has changed over time. Mining employment is in general falling in most of the world, even as output goes up. It is also becoming much more specialized. There are today far fewer semi-skilled ‘pick and shovel’ jobs than there once were, and it is often hard for local people to fill most of the skilled positions. In addition, it appears that a corporate strategy based on ‘contracting out’ or outsourcing combined with better transportation and a smaller work force means that even food and other such commodities may be increasingly supplied by foreign or at least non-local vendors. If governments and other actors want to ensure that local people gain more of the benefits from mining operations, they need to find ways of offsetting these trends.

### **Distributing Wealth**

One of the most contentious issues is how to share mining revenues between the central government and local governments and communities in mining areas. The amount of any additional revenues from mineral development to allocate to the local level as opposed to other national purposes is a political decision within the sphere of sovereign government. Few countries with mineral development have been able to resolve this issue satisfactorily. Failure can have serious consequences for government and companies, potentially creating tension or even conflict with local communities. There can be no simple rule of thumb to deciding on the split of revenues. Much will depend on local circumstances: on the size of the surplus, for example, as well as the level of development around the mine and the needs of the local community versus the rest of the country. Governments will also have to consider local preferences: would people prefer direct payments for land use, say, or would they be happier with higher government expenditure on services?

Governments have a number of different ways of distributing benefits locally.<sup>30</sup> A key method is a more deliberate sharing of fiscal revenues among different levels of government and other stakeholders. In Peru, for example, the mining law (the *Canon Minero*) provides that a fixed percentage of the revenues collected from mining by the central government will be paid to regional authorities. But because of ‘fiscal problems’ the central government has for years delayed transfers to local governments.<sup>31</sup> This has become a major and bitter political controversy.

Some mining-sector reform programmes have included different types of fiscal reform, but these focused more on the type and level of taxation than on fiscal decentralization or

revenue sharing. In Indonesia, the central government, which under the previous regime guarded the revenues closely at the centre, is currently embarking on a radical programme of decentralization that will pass many powers to the regions.<sup>32</sup> In theory, this will enable the regions to retain 80% of the revenues from mining within their boundaries. The whole process is still in a state of flux, however, and there are serious doubts about the technical capacity of local administrations to handle these new responsibilities. In reality, few countries have provisions for revenue distribution beyond the national level.

Some governments have been successful in distributing revenues, but others have been less so. In part this is a question of capacity: many simply lack the personnel or the skills to do the job well. Communication is also a problem – poor information flows among various government departments and between central and local governments often result in ignorance or a misunderstanding of local needs. Inability to distribute mining revenues effectively may also be a reflection of more general weaknesses in governance such as corruption, poor accountability, lack of transparency, and a lack of democratic decision-making processes. (Corruption and conflict are discussed later in this chapter.) In addition, there are political issues – including conflicts that centre on racial and ethnic differences or on the differing agendas of central, regional, and local politicians.

A further complication for developing countries embarking on certain policies is that they may find themselves in conflict with the International Monetary Fund (IMF). Setting aside funds from a particular source of taxation and earmarking them for a specific purpose is called ‘hypothecation’ – a technique that runs counter to IMF policy on fiscal management and budgeting. While the IMF does not oppose revenue-sharing in principle, a mining code that provides for direct transfers of this kind may violate the host government’s prior agreement with the IMF on structural adjustment loans. In theory, this could be avoided by letting local governments themselves tax the mining companies. But this is even riskier, since it would amount to a major shift in power between the centre and the regions. In some countries with unitary legal systems, local government has little or no independent power of taxation, so this step would require fundamental constitutional change. And the IMF would probably like this even less, since the Fund discourages fiscal decentralization and it could, among other things, result in an increase in total public expenditure that could stoke inflation.

There are several other models to indicate how revenues might be distributed to the local level by government, companies, and other actors. (See Chapter 9 for detailed discussion of this.) Particularly where local administration is weak, one option is for the mining companies themselves to take on some of these distribution functions. In PNG, for example, the government established an Infrastructure Tax Credit Scheme that lets the mine developer spend up to 0.75% of the value of gross sales on approved projects and have that amount considered as corporate tax already paid.<sup>33</sup> Most of the projects involve health and education activities, along with other services such as water supplies, roads, and policing. When identifying projects, the companies have to consult with all levels of government as well as with local communities. Although capitalizing on company skills in this way does speed up development investment in remote areas, it may also reduce the opportunities for enhancing the skills of local governments. Any such scheme should probably be transitional and involve as rapid a devolution as possible to local governance institutions. A particular shortcoming of the PNG scheme is that although it was

introduced because of the lack of government capacity, it does not allow developers to get credits for capacity-building projects.

### ***Life After Mining***

In the longer term, many mineral-intensive economies must also plan for the time when minerals run out. Prudent governments will consider the best ways to use their earnings for productive investment.<sup>34</sup> Broadly there are two options. The first is to make investments that will produce a measurable financial return. These could include real estate or financial assets such as stocks and bonds. This is more likely in richer countries that have greater flexibility in how they use their funds and that can more easily postpone government spending. They are also likely to have larger local markets that offer greater investment opportunities – though they may also choose to invest overseas to spread their risk. The second option is to invest in assets that produce less measurable returns. This could involve physical infrastructure, for example, as well as human development in the form of skills development and health and education services. Most poorer countries are likely to choose this approach. Companies and civil society groups can also play an important role in these investments and in ensuring that benefits are sustained at the local level. (See Chapter 9.) In some cases processing plants are constructed close to mines, and once the mine closes many of these plants continue to operate using other feed sources.

In any case it is extremely important to recognize early in project planning that there will be terminal costs, what these will be, and how they will affect a government's obligations. Terminal costs are numerous, diverse, and sometimes very large. Examples might include:

- a sudden increase in unemployment and other social costs as a region is faced with relatively high unemployment;
- the need to pay to maintain roads, telecommunications, electrical supply, or other infrastructure, which was previously done by the company; and
- the need to treat water running off the site to maintain adequate water quality downstream post-closure.

There needs to be some clear agreement on the role of national government, local government, companies, and perhaps other actors in assuming these costs. If this issue is not explicitly raised and settled at the start of a mining project, it will become difficult to deal with later as profitability falls and the company starts to look to its next opportunity. It could also lead to pressure to avoid the consequences by keeping an unprofitable operation open.

The stronger the provision is for a transition to a post-mining economy, the less political pressure there will be on government as well as companies to keep unprofitable mines open. This could lower the cost of subsidies to both of them. Since unprofitable mines may be the ones most prone to skimp on environmental controls or worker safety, it could also have other benefits.

Effective planning is a key requirement if governments are determined to manage resources in order to foster sustainable development. Mining ministries should be working with ministries of finance, planning, environment, labour, and social affairs – all of whom can

play an important part in designing the types of intervention that will maximize mining's positive impact. Nowadays governments are also working more closely with non-governmental organizations (NGOs) and with mining companies – pooling their knowledge and capitalizing on their different skills and experiences. At the MMSD workshop on Managing Mineral Wealth, the need for participation of all stakeholders in decision-making concerning the wider distribution of mineral wealth was identified, as was the need for clarification of the roles and responsibilities and different actors.<sup>35</sup> The mining code of PNG provides a useful example of a framework for decision-making based on a Development Forum process.

### **Coping with Resource Depletion**

Beyond considering the short- and medium-term use of resources, governments also have to consider the implications of the depletion of limited resources. This has led some to propose modifications in the way that governments account for the extractive industries' contribution to national income. Conventional measures of economic activity, in particular GDP, make no allowance for the depreciation of natural capital, whether in terms of exhaustion of minerals reserves or general degradation of the environment. Resource accounting methods, on the other hand, take a more comprehensive and realistic view by drawing up balance sheets that take into account the depreciation of natural assets. Ultimately this could also result in wider use of a more accurate indicator of economic performance – green net national product or 'eco-domestic product'.<sup>36</sup>

These techniques help to highlight the scarcity of resources, warn of excessive exploitation, and permit a more accurate assessment of the relative productivities of different economic sectors.<sup>37</sup> A good example is Botswana's Sustainable Budget Index (SBI), which mainly focuses on recovering resource rents from diamond extraction. This index is the ratio of government expenditures, excluding those on health and education, to the government's 'recurrent revenues' – those in excess of revenues drawn from diamond exploitation. The degree of sustainability of the government's current expenditure can be inferred from the SBI: a value of 1 or less indicates that government consumption has been financed through sources other than diamond mining, and all the revenues from minerals have been used for public investment.<sup>38</sup> A weakness of resource accounting methods is that they may not adequately account for improvements in technology which impact on the availability of mineral reserves. (See Chapter 4.)

### **Corruption**

A major obstacle to equitable distribution of mining revenues is corruption. Some companies in the minerals sector collude in a variety of illicit activities, feeling obliged to – or choosing to – bribe officials as a way to obtain licences and permits; to acquire monopolistic power to thwart competitors; to get preferential access to prospects, assets, or credit; or to sway judicial decisions. Companies may make such payments in the interests of business efficiency, but ultimately such a system is wreaking enormous damage – not only undermining a country's social fabric, but also distorting the government's priorities, undermining overall efficiency, and ultimately slowing down economic growth.<sup>39</sup> Corruption also drains off revenue that countries should be investing in human

development. Indeed, there seems to be a strong positive correlation between high levels of corruption and low levels of human development.<sup>40</sup>

Every country suffers from corruption to some extent. Even the more mature democracies are constantly on their guard: prominent politicians in the United Kingdom, Germany, and France have been investigated for accepting payments from companies that were hoping for preferential treatment. But poorer countries are the most vulnerable, since the opportunities – and needs – are greater and the systems of control laxer. Many public officials in the poorest countries work for very low wages, often taking two or three other jobs to survive. So they may be sorely tempted to supplement their incomes by demanding or accepting bribes. At the same time, bureaucratic and management systems are weak. Many officials have wide powers of discretion, allowing them to work with little or no supervision and to make decisions with huge implications for mining companies. Corrupt officials also know that there is little chance of being caught, and even less of being punished, since systems of financial auditing are often weak or themselves corrupt. In short, weak governance makes corruption more prevalent.

### ***Mining and Corruption***

The most widely accepted indication of the extent of corruption internationally has been devised by a Berlin-based NGO, Transparency International, which gathers the opinions of businesspeople, academics, and country analysts on the extent of corruption in 91 countries. The data are combined to produce a Corruption Perceptions Index (CPI) with ratings that range from 10 (highly clean) down to 0 (highly corrupt). Corruption appears to be especially prevalent in countries that have the highest natural resource endowments. Of 32 leading mineral countries included in the CPI, 23 score less than 5.<sup>41</sup>

Why does the mining sector appear to be correlated with high levels of corruption? In part, this simply reflects the fact that many operations take place in poor countries where the general likelihood of corruption is greater. But the minerals sector itself has several characteristics that further heighten the risk.<sup>42</sup>

- *Large capital expenditures* – Mining is highly capital-intensive. Once a company decides to go ahead, it has to commit huge sums of money to develop mines – often out of proportion to the overall wealth of the host countries. The sudden arrival of funds on this scale and the flows of royalties, taxation, and other payments present enormous temptations for underpaid or unscrupulous officials, who may be operating under information regimes that involve little transparency.
- *Extensive regulation* – Most governments understandably try to regulate the minerals sector closely, demanding that companies fulfil all kinds of conditions and obtain many different permits and approval. Governments know that mining operations, particularly those on a scale sufficiently large to interest transnational companies, have widespread impacts – economic, social, and environmental – while making heavy use of energy and transport infrastructure. They want therefore to exert a reasonable level of control. But if the people issuing the permits and certificates have wide powers of discretion, including that of delaying action, they are potentially open to taking a bribe.

- *Fixed locations* – Mining companies can only work where there are minerals, so their worksites are determined by geological conditions. Other enterprises faced with a difficult environment or widespread corruption might choose to establish their factories or other businesses in more congenial locations. Mining companies have less choice; when the stakes are high, officials can be in a strong position to demand bribes.
- *Multiplicity of small players* – Many smaller mining companies concentrate specifically on exploration, hoping to do just enough work to pique the interest of larger enterprises, and then sell them the rights to exploit their finds. Some of these companies do not have a public reputation to protect and are therefore prepared to take risks – including bribing officials to obtain rights or other approvals they are not entitled to. Whether they do this on their own or with the tacit acceptance of major companies is likely to be debated for a long time. When a larger company that is not complicit in these arrangements buys the mineral rights, it may find itself in a difficult position, since local officials may assume that any illegal payments will continue. Larger companies will worry more about this, as they tend to face more public scrutiny and have to be more protective of their reputations. Nevertheless they may choose the easy way out and pay up. Even if they resist such pressures, they may still find their image tarnished by the actions of the previous owner.

The implications of corruption – and the damage it causes – extend beyond decisions about paying bribes. Mining companies are also affected by corruption elsewhere in government. If politicians or officials divert mining revenues into their own pockets or foreign bank accounts rather than using them to invest in human development, then local people can reasonably conclude that mining brings them little benefit.

In this case, the companies may not always cause the problem but they always suffer the consequences. As guests, mining companies need not just official permission to work but also a less tangible but equally vital ‘social licence’ to operate. They can only gain this – and regularly renew it – if their activities are evidently making a valuable economic and social contribution. When local people see the distribution of revenues to be unjust, they are likely to protest and even evict their guests.

Corruption among local officials can also create a governance vacuum that pulls the mining companies into taking on too many responsibilities. When administration is weak and corrupt, especially in remote areas, mining companies can easily slip into the role of surrogate government. Although this may bring short-term gains for local people, it can also store up problems for the future: corrupt officials feel under even less pressure to deliver services if they know the mining company will step in and make up for their deficiencies. This can leave a costly legacy for companies when the mine closes.

### ***International Action Against Corruption***

Aware of the extent of corruption and the corrosive damage it causes, many governments, businesses, NGOs, and international institutions have been making deliberate attempts to address the problem. The IMF, for example, restricts its operations in countries where it believes that corruption is hampering economic performance. The World Bank, too, has been determined to distance itself from corruption and has introduced sanctions on firms

and governments engaged in corrupt practices: firms that have been guilty of offering bribes are banned from future World Bank–financed procurement worldwide.

Individual governments are also determined to fight corruption by domestic companies operating overseas. The United States was the first to take action – through the Foreign Corrupt Practices Act of 1977, which criminalized the bribing of foreign officials.<sup>43</sup> But nearly 20 years passed until other countries followed suit by signing international agreements. In 1996 the Organization of American States drew up the Inter-American Convention on Corruption, which was signed by its 21 member countries.<sup>44</sup> In 1997 the Organisation for Economic Co-operation and Development (OECD) produced the Convention on Combating Bribery of Foreign Public Officials in International Business Transactions. This has now been signed by 34 countries – the 29 members of the OECD and five others. It came into force in February 1999, and is essentially an attempt to cut off the ‘supply’ of bribes to foreign officials, with each country taking responsibility for the activities of domestic companies and for what happens on its own territory.<sup>45</sup> Companies have to maintain adequate accounting records and undergo external audits. Those found guilty of bribing foreign officials will be suspended from future public contract bids. The convention also requires governments not to allow corporations to charge bribes as a tax-deductible expense.

While the OECD convention is a major step forward, a number of grey areas remain. One that causes particular confusion is that it does not cover what are called ‘facilitation payments’ (also known as ‘grease payments’ or ‘speed money’) – small sums given to officials to encourage them to carry out their normal duties more efficiently or quickly. (The US law also does not address such payments.) Home governments are thus putting mining companies in an anomalous position – ethically and legally – by allowing them to do something abroad for which they would be prosecuted at home.

### ***Fighting Corruption at Home***

Although corruption is a global problem, and international resolve can help, lasting success is likely to be home-grown – through a combined effort involving governments, companies, and many civil society groups. Governments have the most important role to play in steadily reducing the opportunities for corruption as well as stepping up enforcement. They should, for example, simplify cumbersome economic and taxation regulations, demand that public institutions work in a more transparent fashion, and ensure that audit and procurement activities remain open to public scrutiny. They should also aim to limit the number of administrative decisions linked to mining and the number of people permitted to make them. Some of these procedures can be enshrined in the general tax codes or laid down in the mining code. These should establish the criteria on which decisions are made as well as covering the granting and renewal of title, the treatment of subcontractors, and compliance with international accounting standards. Enforcement of anti-corruption measures will also require an independent and effective judiciary.

Companies, too, should be playing their part, as many are already doing. A number of the major mining companies have independently drawn up codes of conduct for their employees and agents. Compliance with such codes is unfortunately sometimes another matter. Much depends on the moral leadership and the tone set by the company’s senior

managers. Companies also need various kinds of in-house enforcement mechanisms. These can take the form of special hotlines or channels through which employees can report infringements directly to another part of the company – the legal department, perhaps, at a regional or head office. (See Box 8–2.) One mining company is currently using ethics forms for employees to report irregularities to the company’s Audit Committee, which can then discuss them in a closed session of the Board.<sup>46</sup>

**Box 8–2. BHP Billiton’s Global Business Conduct Helpline**

After the 2001 merger of the Australian and South African mining companies BHP and Billiton, the company’s Global Helpline, originally established in 1998, was enhanced by introducing a regional capability to address significant issues. Previously, employees could raise an issue from sites through to the corporate Melbourne-based Helpline, the Ethics Panel, and the Board. The new regional capacity will accommodate three different time zones and reflects the greater concentration of the work force in Southern Africa and South America and the reduction in the Australian work force. The Helpline offers free-call access in key global locations to provide support to employees unable to resolve issues at the local level.

During 2000/01, BHP received 300 calls from employees seeking guidance and support on work- or business-related ethical issues. Those mentioned most often included practical implementation of the company’s Charter and Policy positions; information systems, including email and internet usage; and equality in employment, with a number of potentially wrongful dismissals and issues around harassment of employees. Other significant issues included clarification of travel, entertainment, and gifts policies; conflicts of interest; and use of company resources and fraud. Although a relatively small number of calls were received in relation to legal compliance, all issues were tracked and potential breaches or conflicts averted.

Source: BHP Billiton.

But companies will stand a better chance of changing the general business ethos if they work with other companies – and not just those in mining – through local or national chambers of commerce or business associations. They could, for example, maintain a local database that would allow them to share information about potentially corrupt individuals and organizations. At the TI/MMSD workshop on this issue, all agreed that the key is finding a way to take joint action.

A united stand on this issue will avoid victimization of clean companies. In Indonesia, one mining company, though legally not required to do so, has voluntarily disclosed the amounts of royalties and other payments being made to the government in Jakarta. This added to public awareness but also revealed to regional administrations in mining areas just how little they were getting – as well as encouraging other groups, including the military, to demand a share of the cake. One way of avoiding this kind of response is for all companies to contribute to a voluntary international register of payments by mining companies to all levels of government.

Since governance is weak in many poor mining countries, the attack on corruption will also require greater efforts from many parts of civil society. Corruption thrives in the dark, so it is vital to demand that transactions between governments and corporations take place openly. Transparency International and its national chapters, along with other NGOs,

community groups, and particularly the media, can help monitor the activities of governments and corporations. Companies might instinctively prefer self-regulation, but they have a great deal to gain from external auditing, because even when they try to be transparent and disclose their payments they may be distrusted. At the same time, they and NGOs can also work with the more scrupulous public officials to help create a more open atmosphere.

One of the difficulties, of course, is that in countries where governance is weak, civil society is also weak. (See Chapter 14.) This is a particularly acute problem in many African countries and in the more remote parts of other countries such as Indonesia, where there may be few effective civil society organizations. In order to address this, many international organizations, including those of the United Nations and the World Bank as well as many NGOs, will need to step up their efforts to strengthen both governance and civil society.

#### **Box 8–3. Workshop on Corruption Issues in the Mining and Minerals Sector**

An MMSD workshop organized in conjunction with Transparency International identified ways of addressing corruption issues affecting the minerals sector. These included:

- training at all levels in companies on how to cope with corruption issues;
- company codes of conducts designed to be relevant in the global context and local context;
- partnerships and cooperation between companies and other stakeholders to share information and monitoring and to promote reforms aimed at reducing discretion and other incentives for corruption; and
- international mechanisms for monitoring and comparing incidents of corruption.

Source: MMSD (2001d).

## **Protecting and Promoting Human Rights**

Acting either independently or in collusion with governments, mining companies have been accused of riding roughshod over local communities and responding to protests, particularly from indigenous groups, with brutality and violence. To some extent this human rights concern mirrors the issues raised in the preceding section: mining companies can only work where there are minerals, and these are often located in countries and regions where governments have regularly abused the human rights of their own citizens. This leads to charges of complicity, at times direct or indirect responsibility, for violation, since companies have been willing to work with repressive regimes or in countries with weak governance and rule of law, such as Suharto's Indonesia, Zaire under Mobutu or apartheid South Africa. At best, companies have expressed regret, but otherwise some have appeared to be indifferent to the human rights abuses committed all around them, regarding these as beyond their area of responsibility.

Given the scale of the investment, the fixed nature of the operation, and the long time period before an investment is recovered, mining companies need political stability. But what does that mean in this context? A traditional school of thought held that, especially in poor countries, stability was best guaranteed by dictatorship. The endless cabinet shuffling, repeated elections, or the coup-counter coup cycles seen in some countries were a great concern to investors. They felt much more comfortable – as did some in international

financial institutions – with the stable figure of a ‘President for Life’ such as General Suharto. If the excesses of those regimes were at times distasteful, they were rationalized as a necessary step in the development process, or corporate consciences were salved by occasional symbolic statements of disapproval.

A real issue may be whether there is a broad consensus among the principal social groups that mining has a place in the national development strategy. Chile is favoured by investors is, among other reasons, because it is very unlikely that the country will elect any kind of government that does not accord mining a central role in Chile’s future. But in other less democratic circumstances, does too much reliance on personal connections with the ‘strong man’ delay the industry in the task of reaching out to all elements in society? Does it make hostility to mining a potent political issue for the opposition?

To some extent company attitudes have mirrored those of their home governments. Particularly at the height of the cold war, many home countries were prepared to stomach human rights abuses by authoritarian regimes, provided these regime lined up on the ‘correct’ side. But from the late 1980s, and especially following the collapse of communism, there has been a marked shift in international attitudes. Now home-country governments see little advantage in supporting authoritarian regimes – indeed they regard them as a liability, an obstacle to secure and stable trade and investment.

Multinational corporations also have much less incentive to cooperate with authoritarian governments. Not only will they get little encouragement from their own governments, they will expose themselves to global scrutiny by the media and international NGOs. A number of high-profile companies have been targeted for their activities in overseas subsidiaries – for employing children, for example, or paying desperately low wages.<sup>47</sup> Mining companies may feel they are less exposed since they produce intermediate goods rather than consumer goods that are vulnerable to public boycotts. But the case of Shell in Nigeria, for example (where the company was condemned for holding its silence while the government committed human rights abuses), has demonstrated that civil society groups have become increasingly sophisticated in gathering intelligence on human rights abuses.<sup>48</sup> Through the internet and interested media, their findings and recommendations can define and highlight the issues in powerful ways.

Formally, the only entities bound by the 1949 Universal Declaration of Human Rights and the 1986 Declaration on the Right to Development are states, since only they have signed the corresponding covenants. Recent years, however, have seen a distinct shift in international attitudes towards human rights abuses. One important change has been a less reverent attitude towards sovereignty. People have rights regardless of their nationality and they should thus be able to call upon international protection. The United Nations, for example, is now taking a more proactive role and is more likely to countenance intervention in the most severe cases. Second, the task of protecting human rights is increasingly considered to extend beyond states, though this remains an issue of great debate. This is in part a perception of the relative erosion of state power and resources as some cede many more activities to the private sector and particularly to transnational corporations. But with power comes responsibility, and some will argue that the influence and reach of transnationals should also require from them the responsibility not just to respect but to promote human rights. A third change, which is gradually pervading many civil society

groups, is the idea of rights-based development – the notion that people should be able to claim health services, say, or schooling not as a gift from a government or corporation but as a right.

This new atmosphere is presenting mining companies with difficult and complex challenges. Some of the most contentious issues concern land rights, which is addressed in Chapter 7. This section focuses on some other critical human rights criticisms of mining companies: that they collude with security forces, violate labour rights, and work with ‘pariah regimes’.

### **Security Forces**

Some of the worst cases and allegations of human rights abuses have occurred when companies have relied on national security forces either to gain control over land or defend established premises. Mineral deposits are often found in remote areas where company, government officials and security forces lack any grounding in local language and traditions, have no guidance on how to deal with claims to occupy land or continue traditional livelihoods, or feel that with no checks and balances on their actions they can behave as they wish. Today, international attention has become more focused on human rights allegations.

A prominent example of violence related to security forces in a mining area is the Grasberg gold and copper mine.<sup>49</sup> This is located in the Indonesian province of Papua (formerly Irian Jaya). The Government of Indonesia owns the mine, while an affiliate of the US company Freeport McMoRan Copper and Gold Inc. works the deposit. Mining in this province was always likely to be risky, given the long-running struggle for independence. The mine area has long been protected by Indonesian security forces – at times numbering up to 1200. Over the life of the mine as many as 200 people have been killed in the area, almost all of them unarmed civilians, and there is evidence of other widespread abuses, including rape, disappearances of people, intimidation, and forced resettlement. There is no evidence that the company itself had any direct involvement, but the nature of the close relationship between the company and the military, which have frequently shared vehicles, for example, has suggested to some there is guilt by association or complicity.

Bolivia, too, has witnessed mining companies and security forces working in league. The use of security forces against miners led to massacres in 1942, 1949, 1965, and 1967.<sup>50</sup> More recently, in 1996, a dispute between the local managers of a large company and radical small-scale miners escalated into hostage-taking, and a violent confrontation between workers and the security forces that left nine dead and 32 injured.<sup>51</sup>

There are always risks when securing mines in disputed areas or in areas beset with conflicts. And when there is a serious conflict and the military is brought in, they will become part of the problem. Frequently the security personnel, whether employed by the government or the company, will be outsiders, with little sympathy for local customs and traditions. When security personnel misbehave, or behave heavy-handedly, this can provoke a violent community response and further escalation of conflict.

## **Labour Rights and the Repression of Trade Unions**

Historically, some mining companies have had a poor track record when it comes to respecting the rights of workers. Leaving aside the low pay and the appalling conditions under which miners were often obliged to work, employees were frequently subjected to violent abuse.<sup>52</sup> It is encouraging to see how far labour-management relations have improved among the leaders of the industry. But this improvement has not been uniform, and the problems that remain are often found in areas with an authoritarian government.

The standards that companies should be expected to uphold are enshrined in the various conventions of the International Labour Organization (ILO), which establish the right to free association and collective bargaining. In authoritarian countries or those in conflict, however, these rights are frequently denied. The ILO standards are not even universally recognized in the more advanced countries yet, and practical observance often lags behind legal adoption.

One of the most dangerous countries for trade unions is Colombia, which usually accounts for some two-thirds of the deaths of trade union activists each year. In March 2001, two leaders of the mineworkers' union were reportedly shot dead following negotiations with Drummond Coal Company.<sup>53</sup> No arrests have been made to date. At times mineral companies operate in tandem with state security forces to break strikes. When 3800 workers in a Colombian labour union went on strike in 1990 at Exxon's El Cerrejón coal mine at Guajira, the President sent the army in to occupy the mine and break the strike.<sup>54</sup>

In some countries, miners rights are also threatened by difficult and dangerous working conditions. According to official figures, the Chinese coal industry, for example, sees around 10,000 deaths each year, although according to the Independent Confederation of Free Trade Unions the real figure is probably closer to 20,000, given that the authorities often hide occupational accidents.<sup>55</sup>

In India, bonded labour remains a concern. The Government of India ratified ILO Convention 29 concerning forced labour in 1954 and passed the Bonded Labour (Abolition) Act in 1976. Between 1976 and 2001, however, more than 280,000 bonded labourers were identified in 13 Indian states.<sup>56</sup> Some were involved in small-scale mines, particularly those working construction minerals. The majority have been rehabilitated under a scheme sponsored by the Central Government. Despite this effort, bonded labour may be prevalent in a few states, including in small-scale mines.<sup>57</sup>

### **'Pariah' States**

Although there are signs of improvement in the human rights situation in some countries, the same cannot be said in Myanmar (formerly Burma), which is now widely considered one of the world's pariah or failing states. This country, where a military junta prevented an elected government from taking office, offers some of the starkest human rights abuses. A recent World Bank assessment concluded that a quarter of all children between the ages of 10 and 14 are working, and a UN Commission on Human Rights resolution deplored 'the deterioration of the human rights situation...including extrajudicial, summary or arbitrary executions, enforced disappearances, rape, torture, inhuman treatment, mass arrests, forced

labour, forced relocation, and denial of freedom of assembly, association, expression and movement'.<sup>58</sup>

Myanmar has deposits of many minerals, including gemstones, tin, copper, and nickel – though mining accounts for only a small proportion of GDP. Life in the jade mines is particularly harsh and dangerous.<sup>59</sup> Miners, who may be forced labour, still lack basic equipment such as jackhammers, water pumps, and conveyor belts. They also light fuses with cigarettes, and pry the jade out of the ground with their bare hands. There is no safety equipment. On average miners make 50 trips up and down an open cast mine each day for a wage of around US\$1, one-third of which is spent on food and water. A recent report suggests that the government has taken control of most of the mining operations that smuggle jade and gems into China and Thailand.<sup>60</sup> When the government took over the Yawo mining area in 1998, human rights abuses were commonplace, and according to the Karen National Union, they included extrajudicial killings, torture by beating, and looting and extortion.<sup>61</sup>

The international condemnation of the regime has now caused most major mining companies to leave the country. The US mining company Newmont pulled out following the US declaration of a ban on new US investments in the country.<sup>62</sup> And most others have declared that they will stay away: Rio Tinto, for example, announced in 1997 that it would not invest there because of the country's human rights abuses.<sup>63</sup> Nevertheless, at the beginning of 1999 there were thought to be nine foreign companies with major investments in Myanmar.<sup>64</sup> Some were from other countries in the region, while others were 'junior' companies from Australia and Canada.

One concern is that the companies with the greatest commitment to human rights and the most reputation to protect pull out of pariah or failing states early, while foreign mining and other types of investment continue in the form of less recognizable companies whose provenance and ownership are difficult or impossible to trace. This is analogous to the 'drift netters' in the Pacific, who behind layers of intermediary corporate vehicles continue practices almost universally condemned.

### ***A Fresh Commitment to Human Rights***

Over the past 10 years the world has given greater attention to human rights. States that tolerate human rights abuses in or outside their boundaries are increasingly considered internationally unacceptable. This has been reflected in the policies of the UN and other international agencies, and in 1999 the UN Secretary-General launched a Global Compact that called on industry to 'support and respect the protection of international human rights within their sphere of influence and to make sure that they are not complicit in human rights abuses'.<sup>65</sup>

National governments have also been using their convening power and diplomatic 'good offices' to establish the norms they expect companies to follow. The joint U.S./UK Voluntary Principles on Security and Human Rights, announced in December 2000, set forth guidelines on risk assessment and relations with state security forces as well as private security providers for extractive sector companies operating internationally.<sup>66</sup> Two mining companies joined five oil companies in developing the principles, and several other mining

companies are among those considering whether to engage in the process (now joined by the Dutch government and another energy company at the end of 2001).

These principles have helped clarify company responsibilities with respect to security forces as they operate in conflict zones and other regions beset by violence and human rights abuses. Although the principles were drafted collectively by major companies, human rights NGOs and corporate responsibility groups (together with the U.S. and UK governments), they have been criticized for not including governments, companies and NGOs based in the developing world in the initial process. While the Voluntary Principles are gaining recognition as the emerging global standard on the specific issues they address, it remains to be determined how inclusive the process will become and how effective over time the principles can be in altering the conduct of security forces on the ground.

Many NGOs have been establishing standards they would expect companies to follow, such as Amnesty International's Human Rights Guidelines for Companies and the Australian NGOs' Principles for the Conduct of Company Operations within the Minerals Industry.<sup>67</sup>

In this changing international atmosphere, companies too have started to formalize their commitment to human rights. Most realize that they can no longer ignore the social and political realities in the countries where they operate, or shelter behind the excuse of following 'local standards' – especially when these are the standards of remote areas of Indonesia, the Democratic Republic of Congo, or Colombia. In some cases the mining companies, such as Rio Tinto and Freeport-McMoRan, have their own codes of conduct on rights matters or have tried to incorporate the principles of the Universal Declaration of Human Rights into their business principles and internal guidelines.<sup>68</sup>

But it is one thing to have guidelines and codes of conduct and another to enforce them. Many regional business units of major mining companies seem to enjoy a high degree of autonomy, and it is unclear how subject they are to guidance and decision-making at the head office. This is not to say there are problems – rather in the absence of evidence to the contrary, someone somewhere will assume the worst. And there is always some concern that the most unpleasant tasks, which would bring the harshest criticism, are delegated to local intermediaries under some form of 'don't ask, don't tell'. As a result, some mining companies are demanding that each year their employees sign statements about not violating human rights, the content of which is subject to independent verification.

## **The Impact of Armed Conflict**

The last decade has seen widespread civil violence in 15 of the world's 20 least developed nations, many of which are home to some of the most commercially desirable and under-exploited mineral veins.<sup>69</sup> According to a World Bank study, 'countries which have a substantial share of their income (GDP) coming from the export of primary commodities are dramatically more at risk of conflict', in particular during periods of economic decline.<sup>70</sup> For the mineral sector, armed conflict could become increasingly important, not least because important minerals are located in politically unstable areas of the world.

At the same time, mining itself can also serve as a focus for conflict – particularly if the rewards are not equitably shared. (See Chapter 9.) Another aggravating factor is large-scale in-migration, which causes resentment among the current residents. At an MMSD workshop on Armed Conflict and Natural Resources, it was reported that the population at the Grasberg mine in Papua rose from 1000 in 1973 to 110,000 in 1999, largely as a result of opportunities created by the mine.<sup>71</sup> Similar disruption can also occur when mines are closed and thousands of people suddenly find themselves out of work.

Conflict in and around mining operations usually stems from poor governance. Operating often in areas far from capital cities and media attention, government and company officials may have little understanding of the customs and traditions of those living around the mines and lack the capacity to deal with a new and complex environment. These areas may also harbour secessionist movements, as happened in Aceh and Papua in Indonesia and in Bougainville in PNG. (See Box 8–4.) In short, even though mineral exploitation has the potential to bring economic benefits that can lead to peaceful progress, it can also heighten existing tensions or provoke additional grievances.

#### **Box 8–4. Bougainville**

When the operating agreement for the Panguna copper mine on the island of Bougainville in PNG was ratified in 1974, PNG was an Australian colony and the colonial administration forbade direct dealings between indigenous landowners and foreigners. From the outset, however, there were protests about how the land was appropriated, and local people resented the assumption that minerals belong to the state. Moreover, many Bougainvilleans did not want to be part of PNG, even after it became independent in 1975, so the struggle against the mine was also part of a struggle against the PNG government.

Resentment was heightened, however, by the way in which the mine's revenues were distributed. Between 1972 and 1989 the mine's production was worth around US\$1.7 billion, at current values. Of the cash generated, less than 5% made its way back to the island. This served to benefit mainly only a few wealthy landowners. Matters came to a head in 1989 when the mine found itself the focal point of an armed insurrection that left 10,000–15,000 people dead. The Bougainville mine closed and has never reopened.

Source: MMSD (2001e).

Furthermore, mineral exploitation can provide a source of funds to sustain outbreaks of violence. In 1999, for example, it was alleged that South African mining tycoon Billy Rautenbach was bankrolling the Kabila government's side in the civil war in the Democratic Republic of the Congo. The South African government accused Rautenbach of siphoning profits from exploitation of Congolese cobalt and copper mining to reimburse the Mugabe government for Zimbabwe's involvement in the Congo war.<sup>72</sup> And in several other African countries – notably Angola, Sierra Leone, and Liberia – the trade in diamonds has financed the activities of various rebel movements.

In Angola, for instance, the rebel movement UNITA is thought to have earned US\$3.7 billion in 1992–97 from these 'blood' or 'conflict diamonds', which it used to finance its continuing struggle against the government. In 1998 the United Nations placed an embargo on 'all diamonds from Angola that do not pass through official state channels'. Despite this, around US\$1.2 million worth of diamonds continue to be smuggled out of Angola every

day.<sup>73</sup> Not all now come from UNITA, which has lost much of its mining capacity; nevertheless UNITA still accounts for around 25% of the illegal diamonds leaving Angola.<sup>74</sup> Diamonds have also financed armed struggles in Sierra Leone. The rebel Revolutionary United Front may now be disarming, but thanks to mining in the Kono area they are continuing to stockpile their wealth. Sierra Leone does have a system of certification, but many gems are never seen by official eyes, and corrupt dealers continue to buy the diamonds.<sup>75</sup> In response to the problems relating to armed conflict, the Kimberley Process is developing a global system for certification of diamonds. (See Chapter 11.)

In other cases, armed conflict can deter rather than encourage mining investment. A 2001 survey of the mining industry looked at why companies over the previous five years had refrained or withdrawn from otherwise sound investments. Some 78% of respondents indicated that a key factor in the decision was political instability – and in particular, armed conflict.<sup>76</sup> This concern is understandable. Companies know that widespread violence disrupts markets, destroys infrastructure, threatens ownership rights, and breaks supply chains. They also fear for the safety of their workers, who may be kidnapped or killed. And if they stay there, they expose themselves to accusations of complicity in the violence or of fuelling or even causing civil war, and subsequently risk the wrath of popular protest, legal action, stock divestment campaigns, and consumer boycotts.

Countries that need funds from multinational corporations will only be able to attract them if they have achieved some degree of peace and stability. But they will need to be vigilant about avoiding future conflicts – strengthening the quality of governance and honouring commitments to distribute and share mineral revenues fairly among the populations. Conflict prevention strategies can also benefit from cooperation with donor agencies, NGOs, and other institutions.

## **The Way Forward**

From the various workshops and background papers prepared for them and from the regional processes, the following indicated ways forward have emerged.

### ***Attracting Investment***

If governments and international institutions are to continue to adopt legal and institutional changes designed to provide a framework to encourage mineral investment, there is a need to focus on appropriate principles and boundaries for this process. Investors have a legitimate interest in protection against arbitrary government action, but governments should not contract away essential elements of their sovereignty in a rush to attract investment. To address these issues:

- inter-governmental groups such as the World Mines Ministers, CAMMA, APEC, and others could work to develop statements of principle about appropriate terms for concessions, stabilisation agreements, or legislative frameworks;
- the way to strike the right balance between security of investment and sovereign rights needs further investigation;
- UNDP, the UN Conference on Trade and Development (UNCTAD), and other United Nations organizations need to provide further policy guidance and capacity building in this area; and
- all parties must encourage a clear public debate on a definition of principles that balance fair protection for investors with a fair return to host governments, including calculations of all revenue and indirect payments.

### ***Global Markets***

Tariff and non-tariff barriers discourage mineral-producing countries from trying to develop downstream linkages from their minerals industries.

- The major consuming countries should take action to lower barriers to free trade not just in raw mineral commodities but in more elaborated goods made from those minerals.
- In preparation for future rounds of trade negotiations, there is a need for a much more comprehensive and rigorous study of tariff and non-tariff barriers that may hinder developing countries from incorporating more value-added into the kinds of mineral-based products they sell in world markets.

### ***Managing and Distributing Mineral Wealth***

A universal formula for the distribution of wealth within countries is clearly inappropriate. The choice of formula should be determined by each nation according to domestic priorities and political systems. However, central control of all mineral revenues is unlikely to be appropriate. A proportion of benefits needs to be distributed through local

administrative structures to enable them to take advantages of the opportunities presented by mineral development and to prepare for the transition to a post-mineral economy.

Particularly in poor countries, there tends to be a lack of capacity at different levels to manage the challenge of mineral development. To address these challenges at the global level:

- International organizations like the World Bank, UNDP, and UNCTAD should continue to promote study and discussion of wealth distribution issues, including the distribution of returns from mining industry taxes and royalties, in their dialogues with governments, with a view to a better spread of resources to lower levels of government and to communities.
- Companies should be more sensitive to the effects of their distribution of goods and services purchases, and should ensure that capacity building takes place in and around the mines.
- As suggested at the MMSD workshop on Managing Mineral Wealth, an international database of good practices at the national level should be maintained.
- Further research should be done into the use of mineral stabilization funds to deal with unstable prices.

Governments should consider further:

- developing long-term strategic plans for the management of mineral wealth that include appropriate levels and methods of capturing the rent from minerals and distributing revenue; the creation of human, physical, and other forms of capital; and planning for the effects of mine closure at both local and macro level;
- developing measures, including commodity loans and fiscal restraint, to prevent undue stress on public finance resulting from mineral price volatility; and
- committing and making legal provisions for stakeholder consultations at different stages of mineral development.

### ***Transparency in the Management of Mineral Wealth***

To enable free political debate about how mineral wealth is managed:

- Governments and companies should consider ensuring open publication of all of the basic information about how much wealth is generated, the amounts of revenue received by all government departments, and how that money is spent;
- Industry organizations should consider, possibly in partnership with an international organization, taking the initiative to establish an international and public register of all payments by mining companies to governments at all levels; and
- NGO ‘watchdog’ organizations should bring pressure to ensure that open publication is realized.

## **Combating Corruption**

Corruption poses a serious threat to sustainable development, and international concerted action is needed to combat corruption. For the minerals sector, among the measures needed are:

- individual company codes of ethics, aimed at both company employees and contractors, with requirements for employee and contractor sign-offs, plus employee support mechanisms such as internal help lines to report irregularities;
- action by industry organizations to establish common industry-wide guidance;
- government adoption of national legislation to put the OECD anti-corruption convention into effect (recognizing that the complex issue of ‘facilitation payments’ is not yet covered); and
- government collaboration with other sectors, NGOs, and Chambers of Commerce to move as a block to disclose all payments at a national level.

## **Promoting and Protecting Human Rights**

The human rights initiatives needed include:

- company/industry-wide human rights guidelines with employee sign-off and support mechanisms, and extension to all local contractors;
- corporate social reporting/disclosure on human rights indicators;
- cooperation by industry bodies as the Global Reporting Initiative develops mining-specific guidelines;
- company adherence to the Voluntary Principles on Human Rights and Security;
- international organization and company lobbying of governments to adhere to some form of human rights code, including relevant ILO Conventions and global agreements between companies and unions;
- more research on clearer human rights indicators for governments, companies, and civil society.

## **Preventing Armed Conflict**

To prevent mineral-related armed conflict, companies should:

- conduct conflict impact analysis prior to investment decisions where there is a risk of conflict,
- support study of and dissemination about the Kimberly Process of diamond certification as a potential model for use elsewhere in the sector,
- maintain transparent channels of communications with stakeholders who may be in conflict, and
- cooperate with conflict-prevention NGOs to build capacity in and around the mine site to prevent conflict.

## Endnotes

- <sup>1</sup> See the mining cluster studies in Buitelaar (2001).
- <sup>2</sup> UNDP (2001).
- <sup>3</sup> Ibid.
- <sup>4</sup> See Lamont (2001).
- <sup>5</sup> Eggert (2001).
- <sup>6</sup> Ibid.
- <sup>7</sup> Weber-Fahr et al. (2001) p.10.
- <sup>8</sup> World Bank (2000) pp.103-132.
- <sup>9</sup> Eggert (2001).
- <sup>10</sup> [[Bolivian government support of unprofitable tin mines]]
- <sup>11</sup> See World Bank (2000) pp.103-132; Sachs et al. (1995).
- <sup>12</sup> Ibid.
- <sup>13</sup> See, among others, Auty and Mikesell (1998); Mitchell et al. (1996).
- <sup>14</sup> Tomic (2001).
- <sup>15</sup> Governments need to be very careful when guaranteeing 'floor prices', as this could lead to enormous public sector deficits if the government makes the wrong call. The record from other sectors is also not encouraging.
- <sup>16</sup> Daniel (1992).
- <sup>17</sup> Eggert (2001).
- <sup>18</sup> See, for example: Hirschman (1958); Seers (1959); Baldwin (1966).
- <sup>19</sup> Sachs et al. (1995).
- <sup>20</sup> Ostensson (1997).
- <sup>21</sup> Third World Network-Africa (2001), electronic source (forwarded email).
- <sup>22</sup> Loayza (2001).
- <sup>23</sup> Brewer (2001).
- <sup>24</sup> Otto et al. (2000).
- <sup>25</sup> There are considerable economic profits (or rents) to be gained from diamond mining in Botswana due to the unique richness of the resources. There is therefore more rent to be captured.
- <sup>26</sup> Cawood (2001).
- <sup>27</sup> Sunley and Baunsgaard (2001).
- <sup>28</sup> Cawood (2001).
- <sup>29</sup> Otto et al. (2000).
- <sup>30</sup> McPhail (2001).
- <sup>31</sup> Pasco-Font (2001).
- <sup>32</sup> MMSD (2001c).
- <sup>33</sup> Marshall (2001).
- <sup>34</sup> Hannesson (2001).
- <sup>35</sup> MMSD (2001c).
- <sup>36</sup> Green net national product is long established but rarely calculated or published due to a lack of consensus among national accountants on how to measure the depreciation of different forms of capital (i.e., buildings, machinery, and natural capital)
- <sup>37</sup> Hamilton and Lutz (1996).
- <sup>38</sup> Lange (2000).
- <sup>39</sup> Marshall (2001).
- <sup>40</sup> Schloss (2000).
- <sup>41</sup> See Transparency International website, <http://www.transparency.org/>
- <sup>42</sup> This discussion is drawn from Marshall (2001).
- <sup>43</sup> Marshall (2001).
- <sup>44</sup> Organization of American States (1996).
- <sup>45</sup> OECD (1997).

- <sup>46</sup> MMSD Workshop on Human Rights, Berlin, 16 September 2001.
- <sup>47</sup> Handelsman (2001).
- <sup>48</sup> Ibid.
- <sup>49</sup> Grasberg mine description is based on Handelsman (2001).
- <sup>50</sup> Handelsman (2001).
- <sup>51</sup> Ibid.
- <sup>52</sup> See as an example Barron (1957).
- <sup>53</sup> Handelsman (2001).
- <sup>54</sup> Ibid.
- <sup>55</sup> International Confederation of Free Trade Unions (2001) p.98.
- <sup>56</sup> Government of India (2001) p.93.
- <sup>57</sup> TERI (2001).
- <sup>58</sup> World Bank (1999); United Nations Commission on Human Rights (2001).
- <sup>59</sup> This section is based on Müller (1997).
- <sup>60</sup> Handelsman (2001).
- <sup>61</sup> Karen National Union (1998).
- <sup>62</sup> Moody (2000).
- <sup>63</sup> Ibid.
- <sup>64</sup> Ibid.
- <sup>65</sup> Annan (1999).
- <sup>66</sup> Government of United States of America - Department of State (2001).
- <sup>67</sup> Amnesty International (2001); Australian Asia-Pacific Mining Network (1998).
- <sup>68</sup> Ballard (2001).
- <sup>69</sup> UNDP (2000) p.36; World Bank (2000b) p.170.
- <sup>70</sup> Collier (2000) p.7.
- <sup>71</sup> MMSD (2001e) p.19.
- <sup>72</sup> Powell (1999).
- <sup>73</sup> Angola Peace Monitor (2001).
- <sup>74</sup> Ibid.
- <sup>75</sup> BBC News (2001).
- <sup>76</sup> PricewaterhouseCoopers (2001).

