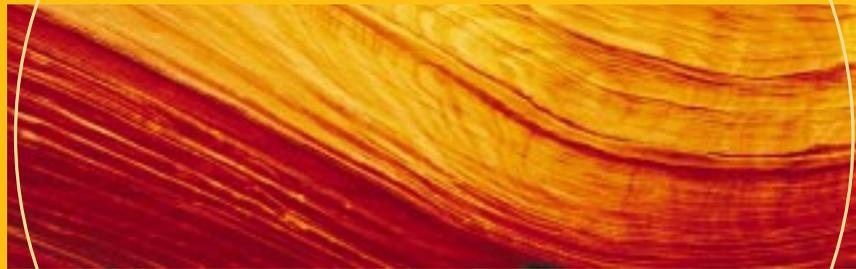


MINING AND DEVELOPMENT

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It's Not Over

When It's Over:

MINE CLOSURE

AROUND THE WORLD

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*On the cover: A detail of Arizona sandstone.*

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**M I N I N G   A N D   D E V E L O P M E N T**

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**CORPORATION**

**2002**

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This is the fourth in a series of short papers that the World Bank Group's Mining Department is publishing to share some of the experience and knowledge gained through daily work with developing country policymakers, the mining industry, and mining communities and their organizations. Over the coming years, as the sector expands, governments, businesses, and communities in many developing countries will face more and more complex issues and difficult trade-offs. We hope to see the "Mining and Development" series inform a wide range of interested parties on the opportunities, as well as the risks, presented by the sector.

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## FOREWORD

A wave of mine closures is looming. Over the next decade, at least 25 major mines in developing countries are scheduled for closure. How well these closures are handled has the potential to shape the global dialogue on the costs and benefits of mining – and shift it either way.

Mine closure is an increasingly complex process, and given the concerns of all stakeholders regarding environmental, social, and economic impacts, best practice has long gone beyond technical solutions. Nowadays, a trilateral process of consultation and problem solving, involving mining companies, governments, and communities, is required for a mine to be closed successfully. In fact, to be fully effective, the process of planning for mine closure should start at the mine design stage.

Proper mine closure can be the bridge to transfer capital extracted from mining to generations to come, thus achieving benefits for today's mining communities and countries that will be sustainable in the future. Mining companies, mining communities, and governments now have the knowledge to ensure that economic development opportunities based on mining are not missed and that negative legacies are not left behind. But, to achieve this, early, concrete and pro-active involvement is required:

- ▶ Unless mining companies take constructive action early on, they will be remembered for a legacy of negative environmental and social impacts and this reputation might increasingly threaten future mining operations elsewhere.
- ▶ Unless local communities are involved proactively, they will not be able to ensure that the benefits from mining will be sustainable for future generations.
- ▶ Unless governments provide legal frameworks and early planning and support to communities, governments will be left to manage large environmental and social problems.

Over time, mine closure will come to be seen not simply as the end of mining, but rather as one step in a larger process of environmental recovery for ecosystems and of social renewal for communities. These recovery processes will continue long after a particular mine ceases.

*James Bond*  
*Mining Department, World Bank Group*  
*June 2002, Washington D.C.*



## It's Not Over When It's Over:

Over the last few years, mine closure has become one of the most difficult issues facing mining companies, mining communities, and mining countries around the world. For mining companies, safety, environmental, and social risks can occur and significant liabilities can arise if closure goes badly. For mining communities, mine closure can cause severe distress because of the threat of economic and social collapse – possibly of an entire region. For governments, abandoned mines can bring large environmental liabilities and clean-up costs unless they set the right frameworks. In any case, for both mining communities and government, mine closure usually means a severe reduction in income at best, and a huge cost in terms of social and environmental mitigation at worst.

All three parties – mining companies, communities, and governments – tend to be heavily involved in mine closure issues. Moreover, each is directly impacted by and concerned about the other parties' respective engagement. Mine closure processes are a prime example of how the new model of trilateral dialogue and cooperation that has been emerging in the mining industry can reduce costs and enhance results for all parties involved.

### **Mine Closure: A Complex Issue that Needs Proactive Management**

Mine closure is a complex issue. A century ago when mines ran out of ore, production

## MINE CLOSURE AROUND THE WORLD

stopped and mines were simply boarded up and abandoned. That was mine closure. Even today, that practice is sometimes still followed. However, most countries and most companies now recognize that mine closure is much more than stopping production and decommissioning the mine. They readily accept that mine closure also requires returning the land to a useful purpose. But beyond physical reclamation, it is increasingly becoming clear that the socio-economic issues of mine closure and the impact on workers, their families, communities, and the local economy must also be addressed.

***ECONOMIC AND SOCIAL ASPECTS OF MINE CLOSURE.*** In many cases, the mine is the local economy's primary provider of income, employment, and services. In such a context, mine closure will have significant impacts on the well-being of the community. Such impacts are exacerbated in developing countries, where alternative economic activity may be more limited, and local government and communities often lack the capacity needed to help structure a development process that would provide suitable alternatives. In most cases, the community and the mine have developed an interdependent relationship, whether in terms of employment, services, infrastructure, environmental impact issues, or taxes and royalties. The level of this integration depends on various factors, including

the age and location of the mine, the company's approach to the community and region, government policies, and the structure of the local and regional economy.

**SUSTAINABILITY AFTER MINE CLOSURE.** In many mining communities and regions, a major portion of government tax revenue comes from mining. If the mine closes, will the government be able to replace this income? What will be the impact on the government's ability to serve its constituents? Mining communities that may have received direct income from the mine will see a sharp decline in that income. It is important for governments and communities to understand and plan for the eventuality of mine closure (see Box 1). They need to develop both non-mining activities and other productive assets that will last beyond the life of the mine and generate income for future generations. At the same time, it is typically not possible to replace the economic benefits of the mine completely; major adjustments will likely be required.

**ENVIRONMENTAL LEGACIES.** Responsible mine closure involves removing plant and equipment and hazardous materials, securing the pits and waste disposal facilities, reclaiming the surface land, and taking all necessary measures to avoid possible future groundwater pollution. Many countries have been burdened with a legacy of unplanned closures, unsafe workings, hazardous sites, and unreclaimed land. Many of these sites are in developed countries. Developing countries attracting new investment can learn lessons from these situations to establish safeguards against unplanned closure. In particular, steps need to be taken to ensure that funding is available to rehabilitate the mine on closure.

## BOX 1. TAKING A LONG-TERM VIEW

It is important to place mining in a much longer time frame than the period needed only to operate the mine. Sustainability throughout the entire mine life cycle, from exploration to post-closure, is the best preparation for successful mine closure (also see Appendix A).

- ▶ If environmental management has been a priority during the life of the mine, then environmental management on closure will be more manageable and less costly.
- ▶ If community consultation has occurred and relationships with stakeholders have been developed before and during the life of the mine, then there is a solid base for consultation in planning for issues surrounding closure.
- ▶ If financial resources have been set aside, then the closure plan can be implemented and communities can better provide for their future needs.
- ▶ If partnerships have been developed and implemented during operation, then the opportunities for handing over assets for community use and for maintaining social services successfully after closure will be greater.

Today, governments often require mining companies to post environmental bonds or contribute to environmental reclamation funds to ensure that sufficient funds are available to close and rehabilitate a mine.

**SOCIAL ASSETS AND SERVICES.** Mining communities often have become dependent on the infrastructure and facilities provided through the local mine. In Eastern Europe

and the former Soviet Union and in many countries in Africa, Asia, and Latin America, much of the housing and many of the hospitals, schools, and preschools were owned by mines before they were privatized. The more remote an area, the more likely it is that roads and transportation networks, improved telecommunication, and water and sanitation services are provided through a mining operation. When the mine closes, the mining company can no longer maintain these services. Simply “handing over” these services to government rarely works. Governments are not always set up to manage such services, and not all of the services are financially viable in and of themselves.

**CAPACITY BUILDING.** In recognition of this problem, new approaches to solve some of these concerns are being developed around the world, mostly focused on building capacity within both mining communities and local governments to maintain essential services. A notable example is the Misima mine in Papua New Guinea, which is scheduled for closure in 2004. Placer Dome, which manages the mine, has worked with the local government and communities for more than five years to develop capacity to manage social services after closure. An alternative approach was adopted in Zambia where, after the copper mines were privatized, a large number of social services, including housing, needed to be transferred from the mining company to other management. Here, local contractors have been tapped to provide the services needed in a financially viable manner.

### A New Wave of Mine Closure: At Least 25 Major Cases over the Next Decade

A first wave of mine closures has already begun to occur in the past decade, especially in China and the coal and lignite industries in Eastern Europe and Germany. In Germany, for example, over two-thirds of the lignite industry has been closed. The cost of over US\$5 billion includes mine site rehabilitation, stabilization of large waste dumps, and dismantling and detoxification of ancillary plant and equipment. In Poland, about one-third of the hard coal mines have been closed. Over 100,000 workers have left the industry, at a cost of about US\$1.5 billion in severance pay and US\$500 million in physical closure costs (see also Box 2 on next page). In China, in the year 2000 alone, about 40,000 illegal small-scale coal mines and over 250 state-owned coal mines were closed<sup>1</sup>. In South Africa, over 100,000 workers have been retrenched from the mining sector in the past few years. Many have returned to their homes in neighboring countries without employment.

Over the next decade, a large number of mine closures is expected, particularly in developing countries. A number of factors are contributing to this trend. First, following a surge in mining investments and privatization in the 1960s, 1970s, and 1980s, many of the large modern mines established during this period are now beginning to move toward the end of their economic life. Second, increased pressures on the commodity markets will leave room only for the most cost-effective producers. At the same time, fiscal pressures in poor countries are reducing direct and indirect subsidies to mining operations, whether privately run or

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<sup>1</sup> Mining Annual Review (2001).

## BOX 2. ELEMENTS OF SOCIAL MITIGATION

Local communities, governments, mining companies, and other stakeholders have a variety of instruments to choose from to mitigate the social costs of mine closure.

**LABOR MARKET INTERVENTIONS.** The most common labor market instruments include the provision of redundancy payments, retraining schemes, and voluntary redundancy schemes. Mostly used by governments in the case of the restructuring of state-owned mines, these instruments are increasingly of interest to private mining companies. The companies may choose to take an active role in any of these arrangements as a partner of governments in mine closure planning and preparation. In the case of urban communities, support for new business development and microenterprise financing can be very important. For example:

- ▶ In Romania in 1998, the government offered a generous lump sum financial package to encourage workers to leave the coal mining sector. Over 80,000 workers (about half the industry workforce) took the package – but no measures were taken to create new jobs. Consequently, most of the funds were used for consumption. When they ran out less than a year later, the workers came back to the government demanding jobs and social assistance. The government responded by developing a social mitigation program to generate new economic activity in the mining regions, including the conversion of disused mine buildings to Workspace Centers, technical assistance to help establish small businesses, employment incentives for on-the-job training to create new jobs, and provision of microcredit facilities. Implementation of the program has been supported by a Mine Closure and Social Mitigation project, financed by the World Bank.
- ▶ In Upper Silesia in Poland, many mine workers received 24-month lump sum payments, accompanied by counseling and small business support services. Surveys indicate that nearly one-third of these Silesian workers have successfully established their own businesses.

**SAFETY NETS FOR THE MOST VULNERABLE.** In many cases, the sudden loss of income and access to social and other services hits the most vulnerable the hardest: children, older people, or the sick, such as members of mine workers' households infected with HIV/AIDS. Depending on the specific country, different models of arranging for safety net type interventions are possible. In most cases, communities and governments feel responsible for caring for these groups. In some cases, companies have stepped up and supported communities in providing such care where they felt a particular responsibility (for example, South Deep mine in South Africa).

**SETTING ASIDE FUNDS TO FINANCE SOCIAL MITIGATION.** As in the case of environmental issues at mine closure, it is imperative to set funds aside early to finance social mitigation measures. Such funds can derive from the central government's fiscal income from mining. They can also take the form of other types of contributions, made directly by the company or set aside by local government during times of high economic activity.

**FOOD SECURITY ISSUES.** Communities may have become accustomed to purchasing much of their food from outside sources, thanks to their mine-related wages. Especially for rural or remote communities, food security planning, agricultural training, and other support will be needed to ensure that they can re-establish the ability to grow all they need.

**GENDER ISSUES.** In designing interventions for social mitigation it is important to recognize the specific impacts of mine closure on women in the workforce (e.g. women might not work directly as miners but be just as affected by mine closure in administrative or other supporting functions) as well as specific gender dimensions of redundancy arrangements (e.g. eligibility of entire households for retraining).

government-owned. Many mining country governments now focus on enhancing the attractiveness of their countries for international mining investors. The resulting competition often results in the closure of inefficiently run mines (see Table1).

At least 25 large mines in developing countries are scheduled for closure within the next 10 years (see Appendix B). In some cases, this will have a major impact on the economy. In Papua New Guinea, for example, three of the country's four large mines will either close or stop mining within the next 10 years. These three mines directly employ about 5,000 workers and generate 15 to 18 percent of the country's GDP. In each case, the mine is the only major economic activity in the region. In China and India, reforms and restructuring of the state-owned mining sector may also result in a large number of mines to be closed and social needs to be addressed, potentially impacting several hundred thousand workers and their families.

**TABLE 1: MINE CLOSURE ISSUES AROUND THE WORLD**

	Historical Legacy of Abandoned Mines	Large State Mining Industry Closures	Government Well Prepared Today for Mine Closure	Responsible Mine Closure
North America & Australia	Many	None	Yes	Mostly
Europe	Some	Yes	Yes	Mostly
Asia, Latin America, Africa	Some	Few	No (now starting)	Some
Former Soviet Union E. Europe	Few	Yes	No (improving)	Some

## How Much Does It Cost – And Who Picks Up The Bill?

**CLOSURE COSTS CAN VARY.** The costs of physical mine closure vary greatly, depending on the age, location, and type of mine and mineral extracted. The variation depends largely on the physical size of the mine and its infrastructure, the history of environmental management (often linked to the age of the mine), the volume of waste, and the geological characteristics (acid rock drainage issues, for instance). Closure costs for environmental issues range from less than US\$1 million each for small mines in Romania to hundreds of millions of dollars for large lignite mines and associated facilities in Germany. More typically, closure costs will range in the tens of millions of dollars. Preliminary research indicates that medium-size open pit and underground mines operating in the past 10 to 15 years cost US\$5-15 million to close, while closure of open pit mines operating for over 35 years, with large waste and tailings facilities, can cost upwards of \$50 million. The occurrence of acid rock drainage adds significant costs in terms of dam and dump rehabilitation and water treatment. Costs need to be estimated on a case by case basis and updated regularly to ensure that sufficient funds are available for closure.

**THE POLLUTER PAYS, IN PRINCIPLE.** Who will pick up (which part of) the bill for mine closure will depend on laws and regulations laying out the roles and responsibilities for mine closure, as well as on a number of other factors, including individual agreements that companies have reached with governments or communities, governments' policies toward mining communities and regions, and the political pressures the latter might be able to exert within any

given country. In all cases, however, the “polluter pays” principle is applied, also given that developing countries cannot afford to pay the clean-up bill for private mining companies’ responsibilities.

The cost of physical mine closure tends to be significantly lower if the mine operator is in charge of the closure and clean-up process, rather than government or environmental funds. This is primarily due to the operator’s familiarity with the mine site and the lower incremental cost of using on-site equipment and staff. Government policy should therefore encourage companies to provide for and conduct physical mine closure themselves.

However, the cost of cleaning up *abandoned* mine sites in developed countries has often fallen to government (e.g. the USA Superfund), as sufficient funds for closure were not provided for by the mine during its operations. In cases of such historical legacies, it is debatable whether the taxpayer, the consumer or the mining industry should pay. New technology may also allow old mine sites and waste to be reclaimed economically when mining firms re-invest in previously abandoned mines (e.g. La Colorada in Mexico and Nkana in Zambia).

***EARLY COST ESTIMATES ARE CRITICAL.***

Obviously, very good cost estimates are needed to make sure that sufficient funds will be made available toward the end of the mine life. Initial cost estimates should be prepared early in the mine’s life (preferably before the mine opens) and should be updated systematically on a regular basis (every 5 years for a 30-year mine life; every 2 years for a 10-year mine life). If the mine is progressively rehabilitated during the

operational phase, the cost at the time of final closure should be much lower. Planning and acting early on can save tens of millions of dollars in rehabilitation cost upon closure.

Most mine closure plans have so far grossly underestimated actual closure costs. Updated cost estimates need to be based upon the latest available data, technology, and current legal requirements and take account of changes in the mining community – rather than merely updating cost estimates based on old closure plans. Maintaining accuracy in cost estimates is further complicated by unexpected changes in the length of mine life. Such changes occur mostly when commodity prices of the mineral being mined drop significantly, thereby shortening the expected economically useful life of the mine.

***INSTRUMENTS FOR FINANCING MINE***

***CLOSURE.*** Given the structure of capital investments necessary for most mining operations – typically resulting in negative cash flows for the first years of an operation – mining companies tend to be reluctant to put aside large sums of money early in the life of the mine. One approach regarding funding for closure is to set aside funds progressively over the life of the mine so that sufficient funds are available at the end to cover closure costs.

Various financial instruments have been developed that would assure governments and communities that companies will be able to live up to their obligations, even if a particular operation must be closed earlier than expected. Such instruments include “closure bonds,” warranties, securities, and insurance. The key is to ensure that the resources exist for the mechanism to be

used when it is needed. Such instruments can also be useful to provide funds for dealing with unexpected problems that may arise during or after closure. While they may be considered separately, “social” costs related to redundancy payments, trust funds, transfer of social assets, and contributions toward future maintenance and operations of social assets also need to be estimated and funded.

Careful consideration is also needed regarding post-mine closure costs. In the case of some Canadian mines, annual expenditures of US\$10 million are needed in perpetuity to neutralize acid rock drainage from the closed workings. Governments need to require that sufficient monitoring takes place after closure and that ongoing environmental issues are addressed.

### Preparing for Mine Closure: Get in Early

An initial mine closure plan is best developed at the time of mine licensing (see Box 3). This can have several important benefits. An initial mine closure plan can influence key technology and waste disposal choices before mining commences and thereby enable rehabilitation to be built into operational activities at a lower cost over the overall mine life. Also, considering closure early can result in a plan that places decisions regarding the size and location of townships and other social infrastructure in a time frame that goes beyond the life of the mine.

For instance, the Ok Tedi mine in the Western Province of Papua New Guinea is the only major economic entity in the province and runs what are arguably the best medical facilities in the region.

## BOX 3. ELEMENTS OF GOOD MINE CLOSURE PLANNING

Good mine closure planning should begin at the feasibility stage and contain at least the following six elements:

- ▶ Clarity about time lines and costs
- ▶ Specifics about the expected final landform and surface rehabilitation, including removal of plant and equipment and stabilization and detoxification of dumps and impoundments
- ▶ Risk assessment to help set priorities for preparatory work
- ▶ Cost-benefit analysis of different options as the plan is being prepared, reviewed, and updated
- ▶ A management plan for how closure will be implemented
- ▶ Proposals for post-closure monitoring arrangements (who monitors, for how long, who pays, who enforces compliance with environmental requirements).

Mine closure plans should be integrated with annual mining plans, especially regarding environmental protection.

The mine is expected to close in 2011; however, closure planning has already commenced. Under this situation, the company has the opportunity to work with the government to make services such as health care sustainable.

**COMMUNITY CONSULTATION.** One of the most important lessons learned by mining companies over the past decade or so is that community consultation, in combination with early mine closure

planning, can have a profound effect on the design of a mine and its supporting infrastructure – often leading to higher efficiencies and better management.

At the Misima mine in Papua New Guinea, for instance, a state-of-the-art hospital was built for the community, only for the mining company to discover later that what the community wanted and needed was much more basic health care, including better access to everyday medicines and to inoculations, as well as some modest improvements in water supply and sanitation. Had the company undertaken better consultation with the community in designing the mine and considered the implications for mine closure, it would have looked at how it could work with local government to provide more of the everyday health services that the community really wanted, probably at a lower overall capital investment and without having generated an asset that may prove problematic to hand over, operate and maintain when the mine closes.

Consultation provides the vehicle to bridge the gap between corporate and community expectations, as well as between company knowledge and community experience. If done well, consultation offers important possibilities to improve mine design and operation and to undertake joint monitoring. (For example, for the Porgera mine in Papua New Guinea, the Porgera Environmental Advisory Committee, or PEAK, provides independent external stakeholder oversight of environmental performance.) Consultation can also lead to joint decision-making, especially regarding social assets before and after mine closure. The business case for consultation is particularly strong for mining companies

## BOX 4. CHILE PREPARING FOR CLOSURES

Chile is certainly one of the countries most successful in making its mining sector a veritable engine for growth. Environmental laws, regulations and institutions govern the mining sector, and thus mine closure, just as any other sector. Some specific mine closure issues are currently under review, but generally the system is considered adequate to ensure environmentally appropriate mine closure.

After about 100 years of mining, most mine closure processes have affected smaller mines. However, the country is now beginning to consider the likely impact of the upcoming closure of some of its larger mines. Will the positive economic impact of mining on the regional economies be sustainable? Local and regional *mesas de dialogo* were formed over the last year or two to bring together the larger and medium-sized mining companies, local and regional governments, and representatives from communities, local industry and commerce, academia, and training institutions. The aim is to develop sustainable clusters of economic development in and around the major mining regions that have the potential to generate productive activities even without the mining sector.

that want to see economic benefits to the local community sustained after the mine closes (see Box 4).

**ENVIRONMENTAL PROTECTION AND RECLAMATION.** The traditional approach toward environmental protection and reclamation has largely been for mining companies to take care of any surface

safety hazards and secure the pits, flooding open pits and, where needed, providing for pumping or drainage of water from underground workings nearby and sealing the entryways, shafts, and adits. This is no longer sufficient. Good practice today requires removing unwanted plant and equipment, stabilizing and securing waste dumps and impoundments, detoxifying hazardous materials, protecting ground water, addressing any acid rock drainage issues (which in the worst cases can be a severe problem), and reclaiming, rehabilitating, and revegetating land in a manner compatible with local vegetation.

Such environmental protection and clean-up apply not only to the mine site but also to all locations affected by the operation, including any rivers, ports, and other transshipment points, some of which may be a hundred miles or more from the mine site. For example, in the case of the Ok Tedi mine in Papua New Guinea, the transshipment port is over 200 miles from the mine, and the area impacted by the disposal of mine waste and tailings extends over 1,200 miles from the mine site to the Torres Straits.

**DISPOSAL OF ASSETS.** Most mine production assets have little value at closure. Those that can be sold should be sold or converted to another productive purpose. Otherwise, plant and equipment need to be demolished or dismantled and removed. Some assets such as tailings impoundments, open pit and underground mine workings, and dumps cannot be removed, and these should be stabilized and made secure and safe. This is a serious task: there are examples of loss of life or severe environmental harm because an improper approach was used. (An example is the

Aberfan coal waste dump collapse in Wales, which buried a nearby school.)

Some physical assets will be of ongoing benefit to local communities, governments, and businesses. Important social or productive assets and infrastructure should be transferred, depending on their nature, to government agencies, nongovernmental organizations (NGOs), private sector entities, or the community.

In Romania, old mine buildings have been sold to entrepreneurs for new business ventures to generate new employment. At the Kelian gold mine in Indonesia, a working group of mining company managers, local community representatives, and government officials has been formed to help arrange the transfer of useful mine infrastructure to the local community and government. If the right match is found with a new owner who has the technical, managerial, and financial capabilities needed to operate the asset, there is a good chance that these services can be operated and maintained viably after the mine closes. At the same time, there may not be feasible long-term solutions for all of these assets. A 50-MW power plant in a remote location well connected to the mine site but only partially connected to surrounding villages and hamlets may simply not be an economic asset to be maintained or operated by the community in the post-closure period.

### **Setting the Scene: Legal Frameworks, Fiscal Regimes, and Planning Processes in Support of Good Mine Closure**

A clear legislative and fiscal framework that sets the parameters for mine closure is the *sine qua non* for developing a mining

sector whose benefits are sustainable – even long after mines must be closed (Box 5). Some countries and jurisdictions (especially in North America and Australia) have established detailed mine closure requirements and procedures. But most countries, in particular, developing countries, currently have few or no applicable laws, regulations, standards, or norms – let alone institutions and government agencies with a mandate and the experience to support mining companies and communities in the trilateral cooperation necessary for successful mine closure.

**LEGAL FRAMEWORKS.** Without a good legal framework for mine closure, mining companies do not know their obligations and potential future liabilities, and mining communities do not know their rights or responsibilities. The absence of a comprehensive legal framework for mine closure can also lead to inefficiencies and confusion among different ministries and government units at the central, regional, and local levels. Unless they know the lines of authority and responsibility, they will not be able to ensure that mine closure takes place properly and that adequate monitoring occurs after closure. In countries with a federal system, such as the United States, Canada, Australia, Brazil, and Argentina, or in countries considering decentralization of authority, such as Indonesia, the regulatory regime needs to specify clearly the demarcation between the authority of the central government agencies and that of the provincial and local agencies.

**FISCAL REGIMES.** Mining fiscal regimes can be designed so as to make provisions towards the mitigation of mine closure impacts. On the one hand, governments may choose to set aside specific funds for

## BOX 5. A LEGAL FRAMEWORK FOR MINE CLOSURE

A legal and regulatory framework for mine closure should:

- ▶ Clarify issues relating to closure planning as part of the approval process
- ▶ Specify mine closure procedures, environmental requirements and standards, and institutional responsibilities and authorities, including:
  - the requirements and procedures to ensure that effective and meaningful consultation takes place with local communities as part of mine closure preparation and planning
  - responsibilities for monitoring and ongoing management if environmental liabilities are incurred.

The framework should also:

- ▶ Require regular updates of the closure plan throughout the life of the mine
- ▶ Allocate responsibilities for the provision of adequate financial resources to cover closure costs.

In setting statutory or regulatory requirements that all mine closure plans need to meet, laws and regulations need to be developed in consultation with important stakeholders, including the local communities, to ensure that concerns are met and insights and experiences are incorporated.

investments in the mining region and mining community during the mine life. Such allocations can be understood to be of a compensatory nature – recognizing the “costs” of mining operations in terms of social disruption and other local concerns. At the same time the allocations can have

the specific objective of building a basis for future economic development, with the end of the mine's life in view. On the other hand, governments may choose to encourage mining companies to undertake similar investments in the mining region. This would be done by allowing for tax deductions for companies' investments in physical and social infrastructure services. This course of action is particularly useful in developing countries, where the private sector often provides infrastructure and social services to the mining area (such as transport, power, health, and education) that are provided by governments in developed countries.

Activities of this nature can further include the financing of training or the provision of credit schemes that support the development of non-mining business activities that could help reduce dependency on the mine. Furthermore, financial resources can be used to help build capacity within local government and the local community for the management of resources and assets.

***ECONOMIC PLANNING PROCESSES.*** Economic planning activities, driven by regional or local government agencies, can help tremendously in mine closure preparation and planning (see Box 6 on next page). Taking a larger regional perspective – beyond the mining activity itself – allows stakeholders to examine options and opportunities whereby the mining operation, and its investments in human capital and infrastructure, can help meet broader development needs and create a springboard for growth in preparation for the post-closure situation. To the extent that provincial and local government agencies can successfully integrate a mining project into the regional development plan, this

can help reduce the dependency of the region on the mine. It can also create a trilateral context for planning and delivering infrastructure and social services (such as transport, power, health, and education) by agencies other than the mine.

With the proper framework and resources, local communities and governments will be the prime partners in any trilateral economic development planning process. They are most aware of local needs, opportunities, and aspirations. However, they need both the financial and technical resources (including capacity) to manage the transition as well as their future responsibilities. The national government can play an important role in this regard, particularly because it typically receives the most tax payments from mining operations. It may consider allocating some of the funds to local communities and local governments especially to help them build capacity to work toward sustainability after mine closure.

### **Defining Responsibilities: The Future of Mine Closure in Developing Countries**

By working together, mining companies, governments, and communities can minimize the risks of mine closure and maximize the opportunities it presents (see Box 7 on page 13 and Appendix C).

#### ***MINING COMPANIES: DRIVERS OF CHANGE.***

Mining companies have a crucial role to play in early planning and close trilateral cooperation, both of which are key elements of successful mine closure. Mining companies know best all the elements and details of the operation and its potential post-closure impacts. For example, by properly designing the means to address the environmental aspects of the closure

## BOX 6.

### THE SULLIVAN MINE: A MODEL OF “BEST PRACTICE” MINE CLOSURE

The Sullivan mine in Northwest Canada presents a particularly interesting example of successful post closure because of the long view taken by all parties involved. Owned by Teck Cominco, the mine had been operating for over 90 years before it was closed in late 2001. During its life, it generated over \$20 billion in revenue and was a major source of employment and income for the local government. The potential for a negative impact on the local community from mine closure was significant.

However, the local government of Kimberley recognized the upcoming challenge over 20 years ago and has since worked proactively to diversify the local economy. For the past ten years, the local government and the mine have worked in partnership to attract investment and stimulate development. Kimberley is located in beautiful surroundings in the Rocky Mountains. The area has long attracted tourism; however, it lacked any major tourism investment. The mining company developed a ski hill and provided low-cost land for a golf course to the local government. The government purchased the ski hill and developed the golf course, and was able to package Kimberley as a year-round resort area and attract major investment from a resort developer. The mining company is also involved in supporting a residential housing development to attract new residents to Kimberley, particularly retirees.

With a mine of this age, there were significant environmental issues of concern to the community. A Sullivan Public Liaison Committee was established to ensure that community concerns were heard and that environmental issues were managed in consultation with the local government, the community, and NGOs in a transparent process.

Tourism development may not be replicable in many cases of mine closure in developing countries. However, the process by which the mine, the local government, and the community have worked together in this case is readily applicable elsewhere. The three key lessons were to start early, work together, and show that government needs to lead the process, with company support.

process and the post-closure situation, mining companies greatly help the social sustainability of the community in the post-closure period. This is especially the case for rural and farming communities.

At the same time, the company will have provided services to employees or to local

communities. It is thus in the best position to make a concerted effort to help build capacity for long-term and financially viable local management of these services – not just at the time of mine closure but during the operational phase as well. It is equally important that mining companies ensure a satisfactory transfer of responsibilities for

## BOX 7. ROLES AND RESPONSIBILITIES OF STAKEHOLDERS

### *MINING COMPANIES*

- ▶ Begin planning for closure at the feasibility stage; regularly update closure planning, with full disclosure of all impacts and issues.
- ▶ Work in partnership with local governments and communities during mining, mine closure planning and closure, building capacity and social capital.
- ▶ Ensure availability of financial resources for closure at time of closure.
- ▶ Implement closure in line with laws, regulations and agreements with government and local communities.

### *LOCAL COMMUNITIES*

- ▶ Avoid dependency.
- ▶ Participate in closure planning.
- ▶ Use income to prepare for the future.

### *CENTRAL GOVERNMENT*

- ▶ Provide an adequate legal and regulatory framework for closure, as well as institutions to monitor and enforce its provisions.
- ▶ Responsibly invest and distribute fiscal revenues from mining.
- ▶ Promote sound local and regional planning.

### *LOCAL GOVERNMENT*

- ▶ Prepare for the post-closure period.
- ▶ Develop sustainable service delivery.
- ▶ Support economic diversification.

### *CIVIL SOCIETY*

- ▶ Support communities in reducing their dependency on the mine.
- ▶ Engage in service delivery, where appropriate, before and after closure.
- ▶ Monitor mining and closure activity.

### *DONORS AND INTERNATIONAL FINANCIAL INSTITUTIONS*

- ▶ Support governments, as necessary, to:
  - establish a modern legal framework for mine closure.
  - finance closure costs and social support for workers leaving state-owned mining operations.
  - facilitate regional planning.
  - encourage economic diversification.
- ▶ Disseminate good practices.

social and infrastructure services and a satisfactory transfer of responsibilities for ensuring the stability of any remaining decommissioned assets, such as tailings impoundments.

***LOCAL COMMUNITIES: MAKING THE MOST OF OPPORTUNITIES AND AVOIDING A CULTURE OF DEPENDENCY.*** Local communities are often best positioned to manage the future of their own economic development.

However, they have often become overly dependent on the mine to provide their needs. For example, in rural locations, as workers give up agriculture or fishery to work for a mining operation, and as cash incomes flow into a community, communities often begin to “import” part of their food supply, consequently reducing their own food security and self-sufficiency.

Dependency is increased where communities have been “kept in the dark” about the mine’s activities and future and thus are not encouraged to plan ahead or better manage their own affairs. The main role for local communities is thus to work toward avoiding such a culture of dependency – or, where this has already happened, to work proactively with mining companies and different levels of governments to achieve independence and self-sufficiency. By thinking about closure from the start and proactively working with company and government officials, communities can identify and take advantage of the opportunities mine closure can bring.

***LOCAL GOVERNMENT: ENABLING COMMUNITIES TO TAKE RESPONSIBILITY.***

Local governments have a key role to play in enabling communities to take responsibility for their own future. Local governments are typically responsible for providing services to communities. Often, they are also involved in monitoring and ensuring that mining takes place in a responsible manner. Local government can make efforts to proactively initiate local and regional economic planning processes in which all groups, including the mining company and mining communities, can actively participate. Most importantly, they can make sure that some of the fiscal transfers they receive as tax payments from the mining operation are used to build social and infrastructure assets viable in the long term.

***CENTRAL GOVERNMENT: SETTING CLOSURE RULES.*** The central government has the role of providing a legal and regulatory framework for mining and mine closure, including assurances that adequate funding is available for closure costs, proper licensing occurs, environmental monitoring takes place, and environmental management is enforced.

***CIVIL SOCIETY: MONITORING PERFORMANCE AND STRENGTHENING CAPACITY.*** Many civil society organizations and NGOs see their main role as monitoring the performance of mining operations. While this can be useful if done in a constructive manner, there is an equally important role for these organizations to play in helping local communities strengthen their planning and leadership capacities. NGOs can help communities avoid reliance on handouts and overdependence on mining for services and economic activities. They can also play a very valuable role in helping to operate social assets and infrastructure if it fits with their capabilities and missions. In some African countries, church agencies are taking over educational and health care facilities after mines are closed. In Papua New Guinea, NGOs are helping train local government officials. In Niger, they are undertaking innovative rehabilitation programs, and in Indonesia they are managing community projects initiated by the mining companies. The private sector can also take on the role of delivering services.

***BILATERAL DONORS AND INTERNATIONAL FINANCIAL INSTITUTIONS.*** Bilateral donors and international financial institutions (IFIs) such as the World Bank can help facilitate mine closure preparation and planning, in particular with respect to the legal and regulatory frameworks required and the

capacity building and training activities needed on the local level (see Box 8). At the same time, where no such planning has taken place in advance, donors and IFIs can assist governments in their efforts toward social and environmental mitigation, especially for state-owned industries. IFIs can also support initiatives regarding

physical mine closure, social mitigation, regional planning, and economic recovery. Given that the issues and concerns over mine closure are still emerging, these institutions also have a role to play in sharing and disseminating good practices and cross-country experience.

## **BOX 8.**

### **THE WORLD BANK GROUP'S WORK ON MINE CLOSURE**

For more than 10 years, the World Bank Group has actively supported countries undertaking mine closure and restructuring. The main focus of this work has been on restructuring the state-owned coal sectors in Central and Eastern Europe and the former Soviet Union. The assistance provided to governments has involved large loans and credits to finance the mitigation of large-scale reductions in employment (in some cases, involving hundreds of thousands of workers) and the remediation of negative environmental legacies so as to facilitate the closure of uneconomic mines. In over 20 countries around the world, the Bank Group has also worked with governments to include mine closure and sustainability in their mining legal and regulatory framework. Through the International Finance Corporation, the World Bank Group also invests directly in private mining operations and works with the sponsors to improve sustainability and ensure early preparation for closure.

The World Bank Group also actively disseminates knowledge about best practice and experiences around the world and provides assistance to improve mine closure planning. A workshop on Mine Closure and Sustainable Development was organized in March 2000, co-hosted by the Metal Mining Agency of Japan. In November 2001, the Bank Group co-sponsored a Roundtable on Sustainability at the Sullivan Mine, British Columbia. In June 2002, a workshop followed that focused on local issues of capacity building for managing mineral wealth. Upcoming events include a conference, in Papua New Guinea, on "Mining and the Community", in September 2002 ([pciu@mineral.gov.pg](mailto:pciu@mineral.gov.pg)). In addition, the Bank Group participates in a number of partnerships with the mining industry, such as Business Partnership for Development (<http://www.bpd-naturalresources.org/index.html>).

## APPENDIX A

### CHECKLIST FOR GOVERNMENTS TO HANDLE SUDDEN OR ORDERLY MINE CLOSURE

#### I. ASSESS RISKS OF SUDDEN MINE CLOSURE

##### Analyze:

- ▶ Existing mine closure plans
- ▶ The structure of the local economy
- ▶ The capacity of local administration

#### II. CONSIDER KEY ISSUES FOR ORDERLY MINE CLOSURE

##### Timing and structure of closure

- ▶ Are plans in place?
- ▶ Are regular reviews made?
- ▶ Are post-closure monitoring mechanisms in place?
- ▶ Can standards and arrangements for closure be tailored to specific situations?

##### Social and economic aspects

- ▶ Are arrangements in place for the transfer of the socio-economic infrastructure?
- ▶ Are adequate financial resources being committed by the mining company?
- ▶ Are the necessary financial mechanisms in place to make these resources available?
- ▶ Are future risks being taken into account, such as fluctuations in metal prices, which may unexpectedly accelerate closure?

##### Environmental aspects

- ▶ Are environmental roles and responsibilities defined?
- ▶ Are closure, rehabilitation, and clean-up properly defined?
- ▶ Are satisfactory arrangements and agreements in place for alternative land uses after closure?
- ▶ Are safety issues taken into account such as dam stability in the post-closure context?
- ▶ Are satisfactory arrangements for post-closure monitoring identified and in place?

##### Particular risks of dependency

- ▶ Are the impacts on the poor identified, and are they being adequately addressed?
- ▶ What share of the local and regional economy depends on mining?
- ▶ Have the opportunities to use the mine infrastructure as an "engine for growth" for future development been identified, and has agreement been reached on implementation arrangements?
- ▶ Are arrangements in place to maintain and operate this infrastructure so that it can be sustained after closure?

##### Development planning to mitigate risks from mine closure

- ▶ Do the national, regional, and local authorities include the scenario of closure in their development planning?
- ▶ Are provisions being made to use the benefits of mining to support development initiatives geared to closure?

##### Labor market interventions

- ▶ What labor market interventions will be needed upon closure, and have they been put in place?

*Source: World Bank (2001)*

COUNTRY	SITE LOCATION	MINERAL	SPONSOR	LIFESPAN	EMPLOYMENT	SOURCE OF INFORMATION
Argentina	Cerro Vanguardia	Gold, Silver	AngloGold (46.25%), Perez Compac (46.25%), Santa Cruz Province (7.5%)	2010	469	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Cerro.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Cerro.asp</a>
Brazil	Serra Grande	Gold	AngloGold (50%);TVX Gold Inc. (50%)	2008	640	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/SerraGrande.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/SerraGrande.asp</a>
Brazil	Crixas	Gold	AngloGold (50%), TVX Newmont (50%)	2009	N/A	<a href="http://www.tvxgold.com/properties/mines/crixas.htm">http://www.tvxgold.com/properties/mines/crixas.htm</a>
Chile	Agua de la Falda	Gold	Barrick Gold Corp.	2002	N/A	Barrick Annual Report 2001
Chile	El Indio	Gold, Copper	Barrick Gold Corp.	2002	N/A	Barrick Annual Report 2001
Chile	La Coipa	Gold, Silver	Placer Dome (50%), TVX Normandy Americas Inc. (50%)	2008	440	<a href="http://www.placerdome.com/properties/index.asp">http://www.placerdome.com/properties/index.asp</a>
Chile	Michilla	Copper	Antofagasta (74%), Chilean Investors (26%)	2007	463	<a href="http://www.antofagasta.co.uk/mining/michilla/m_key.html">http://www.antofagasta.co.uk/mining/michilla/m_key.html</a>
Chile	Quebrada Blanca	Copper	Aur Resources (76.5%), Pudahuel and ENAMI (13.5%)	2012	N/A	<a href="http://www.aurreources.com/SA_que.html">http://www.aurreources.com/SA_que.html</a>
Mali	Sadiola	Gold	AngloGold (38%), IAMGOLD (38%), GOM (18%), IFC (6%)	2008	820	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Sadiola.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Sadiola.asp</a>
Mali	Morila	Gold	AngloGold (40%), Randgold Resources (40%), GOM (20%)	2009	770	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Morila.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Morila.asp</a>
Mali	Yatela	Gold	AngloGold (40%), IAMGOLD (40%), GOM (20%)	2007	N/A	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Yatela.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Yatela.asp</a>
Mexico	Cerro San Pedro	Gold	Glamis Gold Ltd. (50%), Metallica Resources Inc. (50%)	2008	N/A	<a href="http://www.glamis.com/properties/mexico/cerro_san_pedro.html">http://www.glamis.com/properties/mexico/cerro_san_pedro.html</a>
Namibia	Namdeb	Diamonds	DeBeers	2010	N/A	<a href="http://www.eyeworks.co.za/debeers/deb009bm.htm">http://www.eyeworks.co.za/debeers/deb009bm.htm</a>
Namibia	Navachab	Gold	AngloGold	2005	350	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Navachab.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Navachab.asp</a>
PNG	Misima	Gold, Silver	Placer Dome (80%), Orogen Minerals Ltd. (20%)	2004	668	<a href="http://www.placerdome.com/properties/index.asp">http://www.placerdome.com/properties/index.asp</a>
PNG	Porgera	Gold	Placer Dome (50%), Aurion Gold Ltd. (25%), Orogen Minerals Ltd. (20%), the Enga Provincial gov't and landowners (5%)	2012	2,000	<a href="http://www.placerdome.com/properties/index.asp">http://www.placerdome.com/properties/index.asp</a>
PNG	Ok Tedi	Copper, Gold	BHP Minerals Holdings Pty Ltd. (52%), the State (20%), Inmet Mining Corporation (18%), Mineral Resources Ok Tedi No.2 Limited (10%)	2011	2,300	Company announcement
South Africa	Free State	Gold	AngloGold Limited (100%)	2002	2,400	Company announcement
South Africa	Ergo*	Gold	AngloGold Limited (100%)	2004	1,270	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Ergo.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Ergo.asp</a>
South Africa	Bambanani	Gold	AngloGold Limited (100%)	2005	6,130	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Bambanani.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Bambanani.asp</a>
South Africa	Savuka	Gold	AngloGold Limited (100%)	soon	3,680	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/savuka.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/savuka.asp</a>
South Africa	Great Noligwa	Gold	AngloGold Limited (100%)	2009	9,650	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/GreatNoligwa.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/GreatNoligwa.asp</a>
South Africa	Namaqualand	Diamonds	DeBeers	2010	2,181	<a href="http://www.eyeworks.co.za/debeers/deb009be.htm">http://www.eyeworks.co.za/debeers/deb009be.htm</a>
South Africa	Tau Lekoa	Gold	AngloGold Limited (100%)	2008	3,600	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/TauLekoa.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/TauLekoa.asp</a>
South Africa	Tau Tona	Gold	AngloGold Limited (100%)	2011	5,260	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/TauTona.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/TauTona.asp</a>
South Africa	Tshepong	Gold	AngloGold Limited (100%)	2012	3,870	<a href="http://www.anglogold.com/AboutAngloGold/FactSheets/Tshepong.asp">http://www.anglogold.com/AboutAngloGold/FactSheets/Tshepong.asp</a>
Tanzania	Williamson	Diamonds	DeBeers	2006	756	<a href="http://www.eyeworks.co.za/debeers/deb009bl.htm">http://www.eyeworks.co.za/debeers/deb009bl.htm</a>

\*(previously East Rand Gold and Uranium Company Limited)

## APPENDIX C

### WHO DOES WHAT WHEN IN MINE CLOSURE

■ FINAL RESPONSIBILITY    □ MONITOR    □ SUPPORT/COOPERATE

ACTORS	Framework	Exploration	Construction	Operation	Closure	Post-Closure
GOVERNMENT	SET ROLES & RESPONSIB.	MONITOR, ENFORCE, INFORM				MONITOR AND INFORM
MINING COMPANY	SUPPORT	CONSULT – DESIGN SITE W/CLOSURE IN VIEW – PARTNERSHIPS				INITIAL MONITORING THEN SUPPORT
COMMUNITY	SUPPORT	INTEGRATE CLOSURE PLANNING IN BUSINESS PROCESSES FORM AND SUSTAIN PARTNERSHIPS WITH COMPANY AND OTHERS				
LOCAL GOVERNMENT	SUPPORT	BEGIN REGIONAL PLANNING PROCESSES WITH CLOSURE IN MIND EARLY ON SET-UP AND SUSTAIN PARTNERSHIPS – SUSTAINABLE ECONOMIC ACTIVITIES				
NGOS/CIVIL SOCIETY ORG.	SUPPORT	LINKS TO INTERNATIONAL NGOS – CAPACITY BUILDING FOR LOCAL COMMUNITIES – MONITOR AND INFORM				
INTERNATIONAL AGENCIES	SUPPORT	DISSEMINATE BEST PRACTICE - DEVELOP AND PROPAGATE STANDARDS AND GUIDELINES – WORK WITH GOVERNMENT, COMPANIES AND COMMUNITIES				

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Weber-Fahr, Monika and Craig Andrews, Leo Maraboli, John E. Strongman. 2002. *An Asset for Competitiveness: Sound Environmental Management in Mining Countries*. In: Mining and Development, May 2002, Washington, D.C.

World Bank. 2001. *Poverty Reduction Strategy Sourcebook-Mining*  
[www.worldbank.org/poverty/strategies/chapters/mining/mining.htm](http://www.worldbank.org/poverty/strategies/chapters/mining/mining.htm)

#### FURTHER READING

- ▶ The Sullivan Round Table, held in Kimberley, British Columbia, Canada, from November 4-6, 2001, examined sustainability throughout the mine life cycle in mines in Canada, Latin America, and Papua New Guinea. For further information please contact Teck Cominco in Vancouver, Canada.
- ▶ Mine Closure and Sustainable Development Workshop (2000) Proceedings. Available for purchase from Mining Journal Books Ltd., UK.  
 e-mail: [books@mining-journal.com](mailto:books@mining-journal.com)  
 web: [www.mining-journal.com](http://www.mining-journal.com).
- ▶ World Bank Group Mining Department:  
[www.ifc.org/mining](http://www.ifc.org/mining)  
[www.worldbank.org/mining](http://www.worldbank.org/mining)
- ▶ World Bank Group Guidelines on the Environment (IBRD/IDA, IFC, MIGA)  
[www.worldbank.org/environment/op\\_policies.htm](http://www.worldbank.org/environment/op_policies.htm)
- ▶ The World Bank Group's Environmental Agenda  
[www.worldbank.org/environment](http://www.worldbank.org/environment)
- ▶ Experiences with Partnerships between Governments, Mining Firms, and Local Communities: [www.bpd-naturalresources.org/](http://www.bpd-naturalresources.org/)

# THE WORLD BANK GROUP'S MINING DEPARTMENT

## SERVICES TO GOVERNMENTS

**Sovereign lending and advice for the design and implementation of policy and regulatory frameworks and interventions that help:**

- ▶ Support private sector development and attract national and foreign investment for environmentally and socially sustainable mining.
- ▶ Equip government agencies to manage fiscal revenues from mining.
- ▶ Create economically, environmentally, and socially sustainable mine closure programs.
- ▶ Encourage local and regional economic development in the context of mining.
- ▶ Equip government agencies to restructure and privatize mining operations.
- ▶ Equip administrations to better administer/monitor and enforce environmental and social laws and regulations.
- ▶ Encourage coal extraction strategies that minimize global warming effects.

## SERVICES TO THE PRIVATE SECTOR

**Support and financing for environmentally and socially sustainable private sector investment in developing countries' mining sectors through:**

- ▶ Equity investment in and loans to mining companies, including loans syndicated from commercial banks under IFC's syndications loan umbrella.
- ▶ Various risk insurance instruments (IBRD, MIGA).
- ▶ Advice and investment in support of privatization.
- ▶ Partnerships to disseminate and apply best practices (Business Partners for Development: [www.bpdweb.org](http://www.bpdweb.org))

IFC has 29 mining projects in its portfolio for a total of \$669 million (FY2001).

## SERVICES TO CIVIL SOCIETY

**Support the dialogue with mining companies and government by:**

- ▶ Facilitating access to information on projects, policies, and best practices.
- ▶ Arranging conferences and other formal and informal meetings.
- ▶ Supporting partnerships with mining firms and civil society organizations that integrate civil society in mining activities.
- ▶ Promoting general accessibility to civil society regarding World Bank and IFC-financed projects in mining and related activities.

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World Bank and  
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[www.worldbank.org/mining](http://www.worldbank.org/mining)  
[www.ifc.org/mining](http://www.ifc.org/mining)

