Mining, privatization and the environment

By Kathleen Anderson

An ever more crucial question is how to render the benefits which mining brings, while minimizing or mitigating the environmental costs. In this paper Kathleen Anderson examines what the barriers and opportunities are for governments considering privatization of their State-owned mining interests. Kathleen Anderson proposes a set of conditions against which to measure the potential success of policies designed to achieve sustainability in mining and concludes with a discussion of the barriers, obstacles, opportunities, and risks in regimes considering privatization of mining.

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The search for sustainable resource development is the search for ways to achieve the benefits of economic development, to alleviate poverty and ease human suffering, while protecting the environment so that future generations may enjoy these benefits as well. Those who design and implement public policies related to mining and the environment face a particularly complex challenge. Mining projects can bring to a country and a community opportunities for employment, foreign exchange with which to upgrade equipment and technologies, government revenues to pay for schools, hospitals, and roads, and a wide range of other benefits. Many mines are located in remote areas, where there are few alternative sources of employment, and the chance to realize these benefits is often welcomed by both government and citizens. Often associated with those benefits, however, is an equally wide range of environmental costs arising from impacts on health of the surrounding communities and ecosystems.

Often pressured by non-governmental organizations, banks, the public, and mining companies themselves, government decision makers ask: What are the public policies most likely to render the benefits which mining brings, while minimizing or mitigating the environmental costs? Under what regimes of ownership, management, and regulation are these challenges most likely to be successfully met? And of particular interest today, what are the barriers and opportunities for governments considering privatization of their state owned mining interests?

There is no long tradition of successes and failures to refer to in answering these questions; there are few policies which have been formulated and reformulated to reflect lessons learned, for until the very recent past these questions were not asked. Hence, it is difficult to issue a clear prescription, and I will not attempt to do so in this paper. I will, however, propose a set of conditions against which to measure the potential success of policies designed to achieve economic and environmental sustainability in mining and conclude with a discussion of the barriers, obstacles, opportunities, and risks in regimes considering privatization of mining.

Background

The health, safety, and well-being of miners, and of those living at and near the mine, are often at risk. Some of the risks to the human population are directly associated with mining activities: open, abandoned shafts and adits result in many deaths and injuries each year; windblown mine waste can contaminate crops; tailings dams can collapse and destroy homes. These examples are obvious and relatively easy to control. Many direct human health risks are more subtle and so more difficult to understand and predict; multiple pathways for exposure, poorly understood dose-response mechanisms, confounding socio-economic variables, and naturally occurring background levels of contaminants all contribute to this difficulty. While much progress has been made in recent years, it is still a fact that inadequate mine ventilation, poor construction, and the lack of basic safety precautions continue to threaten the health and safety of miners throughout much of the world.

Residents of mining settlements are often subjected to other impacts which are less obvious. Transient, even semi-permanent, workers can create social instability and introduce sexually transmitted diseases, alcoholism, and increased violence into communities. The loss of traditional cultural values is one of the greatest threats to host communities. Whether peopled by members of the dominant culture or by indigenous groups, the life of towns and villages is often irrevocably changed; such elements as local history and folk-knowledge, traditional crafts, religious practic-

es, familial systems, holiday celebrations, have often been lost in the race to extract resources. It may become increasingly difficult to protect sites of historic, archeological, or religious significance. The most serious threat to human health in many mining communities is the lack of basic infrastructure, primarily water and sewage treatment systems.

The range and types of ecosystem degradation which may occur will be determined by geochemistry, climate, topography, hydrology, mine design, and many other factors specific to each mineral deposit. Acid rock drainage can carry metals into nearby streams and rivers, damaging fisheries, agriculture, and recreation. Groundwater contaminated by discharges from mine operations can migrate into drinking water wells. Turbidity produced by tailings deposited into rivers and bays may affect aquatic life. Many species may be affected when pathways for migration and breeding grounds are disrupted.

Evaluating progress

Governments, regulators, and the citizens of mining communities face the challenge of designing and implementing public policies which will achieve a satisfactory balance between the total social benefits which can be derived from mining and the total social costs which arise from the degradation of human health, social stability, and the natural environment.

This process must take into account distribution: designing public policies which assure that, to the extent possible, those who receive the benefits of mining bear its full cost. This is no small challenge, as the beneficiaries from mining projects range from suppliers to miners to children schooled in company schools to offshore shareholders, to the banks in London and New York that finance successful projects. This question of equity is neither simple nor transparent and cannot be reduced to a simple equation. To address it will require wisdom, judgement, and foresight on the part of decision makers, but address it they must. Given the difficulty and uncertainty of this task, is there a starting point at which these abstract concepts can be interpreted in a meaningful way so as to assist decision makers?

There are at least two specific criteria which, if achieved, indicate that progress is being made. The first is that contaminants do not leave the mine site. When fisherman and farmers downstream from the mine cannot fish and farm because copper or cyanide has spilled from the mine site into the river, they are subjected to a cost for which there is no commensurate benefit. This is one of the principles underlying the "polluter pays" policy which most countries are attempting to adopt.

Policies which support the achievement of success in this measure include a commitment to baseline studies, often in the context of environmental impact assessments, so that it can be determined whether contaminants have been transported off the minesite. At a minimum, monitoring, inspection, and some system of enforcement will be necessary to assure that the polluter pays.

The second criteria is that there should be no intergenerational transfer of the costs, social or private, associated with the mine. If subsequent land uses are not possible, if the mined land has no economic use after the closure, all future streams of income which would have derived from that piece of land are effectively transferred to the current generation. While this generation receives the benefits, all future generations pay the cost.

This having been said, it has been cogently argued that some mines are so far distant from human settlements, or located in such inhospitable climates, that there is almost no probability that future generations would attempt to find other economic uses for that mined land. In this circumstance, a decision must be made weighting future generations' freedom to choose against greater profits in this generation; this is ultimately a political decision which will, again, require the judgement and wisdom on the part of designated leaders.

One of the more important intergenerational transfers is the high social cost to communities facing the transition to a post mining economy. Policy options to address this issue include, but are not limited to planning early for economic diversification; negotiating re-training and re-location provisions with the mining company; communicating early and often with the community that closure is expected; and incorporating some of these costs into bonding, bank guarantees, trust funds, and other financial assurance schemes.

Mining environmental management and privatization

The objectives of privatization are many and varied. First, and most often cited, is the argument that privatization will create vigorous, competitive markets in which prices, rather than social policies, will drive the behaviour of firms and the factors of production they employ. Other objectives include the desire to attract foreign investment, generate funds to offset mounting public debt, and introduce newer, more profitable technologies to industries which have languished under public guidance. Are these objectives compatible with the global mandate for economic development and enhanced environmental performance and, in particular, can the mining industry be expected to perform in such a way that these outcomes will indeed be achieved? There are at least three views about how this question might be answered, with strong arguments to support each.

The first view is that yes, indeed, privatization will result in better environmental protection. Successful, realistic sustainable environmental outcomes are most likely to be achieved by privately owned companies acting in response to the pressures of the free market. Underly-

ing this conclusion is the premise that good miners pollute less, a premise which is empirically observable in many countries. Good mining practices result in higher rates of recovery, with less waste production, which in turn results in higher profits. This is achieved by careful site selection and design, application of state-of-the-art environmental technologies and engineering practices, and acquisition of the best managerial, engineering and scientific talent, all of which have become standard practice for many of the largest mining companies. There is abundant evidence that many multinational firms employ best environmental practices which often exceed the requirements of the host country.

While one cannot know with certainty what motivates the higher level of environmental performance for the large multi-national firms, public pressure from non-governmental organizations dedicated to policing the environmental consequences from large mines has certainly had a major impact. The scrutiny of non-governmental organizations has also been credited with creating an incentive for multinationals to make social investments in infrastructure, economic diversification, local hiring guarantees, and other provisions to minimize the social impacts of mining. While this may in part be true, I believe it also reflects the wisdom derived from hard-learned lessons, the wisdom that strong partnerships with local communities will, in the long run, result in reduced costs for labour turnover, illness, accidental deaths and injuries, lost work days, and community strife.

If a country is fortunate enough to have deposits of sufficient size and grade to attract the multinationals, this optimistic view of the benefits of privatization is in many ways justifiable. It is possible, even likely, that intense public scrutiny, and highly competitive market conditions, will lead to the achievement of our two that the measures of long-term success in sustainable outcomes-the absence of intergenerational transfers of environmental and social externalities and the elimination of offsite transport of contaminants. The primary challenges for the government, and its regulators, will be to negotiate financial terms and agreements which capture a sufficient share of the rent; to have regulations in place which are fair, appropriate, and consistent; and, if necessary, to have the capacity to enforce agreements and compliance with environmental regulations.

The second view about privatization and the potential success of managing mining to achieve the long-term success in the measures of sustainability is quite different. This view holds that state-owned mining interests, in many cases, have through poor management and a misdirected set of social and political incentives created a circumstance in which the richest mineral deposits have been exploited and the benefits squandered. The available domestic labour force is uneducated, unwilling, and perhaps unable to work in the fashion required by rigorous competitive conditions. Those organizations and individuals which have benefited the most from state-owned mining activities can be expected to be obstructionist, politically and otherwise, in order to continue to receive the benefits to which they have become accustomed.

What is the potential to achieve environmental gains and economic improvements under this set of circumstances? With a sufficiently rich mineral endowment, and the consequent promise of economic returns, many mining firms would be willing to risk investment. If the mineral endowment is such that only small and medium-sized firms are attracted, there are likely to be many obstacles to governments fully maximizing the benefits of mining while minimizing the environmental costs. For such firms, environmental protection expenditures are often the first to be sacrificed when cash flows are constricted. Often this is at the end of the mine life, when the costs of reclamation and closure to protect subsequent land uses are greatest, and the probability that the firm will declare bankruptcy is often greatest as well. Without large numbers of altruistic shareholders or the scrutiny of non-governmental organizations to press for good environmental performance and social responsibility, many of these firms may have few incentives to perform well and many incentives to perform poorly.

Without the resources of the multinationals, small and medium-sized firmsthey often cannot compete for the best talent or afford the best technologies. They are more likely to represent a credit risk to the institutions and individuals who finance their projects, and can be more easily pressured into going through development and into production under less-than-ideal circumstances so that the financial investment can be recovered quickly. To minimize financial risks they may extract minerals at a rate which does not allow them to employ the best engineering practices and optimal pollution prevention techniques. Additionally, they may not have the experience or resources to participate fully in community and infrastructure development.

By no means does this glum scenario predict the behaviour of all firms in this category. Without the burden of large numbers of shareholders and many levels of management to appease, some firms may have more freedom to try innovative and low-cost approaches which result in higher rates of recovery of minerals and less environmental degradation. Smaller firms may be more willing and have more flexibility to negotiate cleanups of old mine waste as part of their concession, without the fear that this will establish a precedent for what will be expected of them at all of their mines around the world. Additionally, owners may take a personal interest in the well-being of their host countries and participate actively in local mining associations, as well as communities, to assure the long-run success of their mining projects.

That there is much variation within the community of small and medium-sized mining companies who may be willing to invest is at the root of the biggest challenge for countries considering privitization, either domestically or through foreign investment. Much progress can be made toward the twin goals of economic development and environmental protection; however governments will have to make visible a strong and unified political will; provide substantial funding to develop and implement systems for baseline studies, environmental assessments, permitting, monitoring, and enforcement; and demonstrate a willingness to work with all affected parties to begin resolving conflicts in a relatively transparent and culturally acceptable manner. All of this is far easier to prescribe than to accomplish. Countries hoping to sell their mineral assets as a quick way to raise monies to reduce debt may find it much more difficult and expensive than expected to avoid additional environmental degradation and economic dislocation.

Yet another view is that state-owned mining interests are the best vehicle to achieve the joint objectives of economic development and environmental protection. This view would be supported by the premise that the greatest costs of mining are the social costs, which often far exceed private costs. For example, one of the more serious environmental effects from past mining has been watershed degradation. In cases where severe degradation has occurred, the economic base for most other activities within the watershed has been profoundly affected. Watersheds may cross national political boundaries, putting some countries at risk of violating international treaties or agreements if waters become severely polluted.

However, because watersheds by definition drain quite large geographic areas which contain multiple sources of environmental contamination, it is seldom possible to achieve measureable environmental improvement by targeting the clean up of waste from one industry. For watersheds to be properly protected and restored, the cooperation of business owners, manufacturers, road maintainence crews, farmers, residents, and miners, is required. This type of solution requires building broad political coalitions, acquiring the resources to encourage and assist those impacting the watershed to change practices, and then taking coordinated, incremental steps toward improvements which may not be significantly observable for years, if not decades. One can argue that state owned mining interests are more likely to embrace the long term management of regional, amorphous environmental degradation.

In theory, it is the state that should be more likely to embrace this type of regional, long-term management of severe environmental degradation, which will primarily benefit generations yet to be born. With the mandate, explicit or not, to carry out business in such a way as to achieve ancillary social objectives, it is possible to envision state owned mining enterprises creating income and employment in mine waste remediation projects, for example.

The primary support, however, for the continued participation of state interests in the mining sector is that the reasons for which states became involved initially have not gone away. These reasons include the expatriation of the profits earned in the extraction of a finite resource, the presence of large and immutable regional pockets of severe poverty and unemployment, and the oftentimes inequitable distribution of the benefits of mining. ■