

MINING, ENVIRONMENT AND DEVELOPMENT

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4. Mineral policy, legislation and regulation

by

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Preface

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2. International law and mineral resources, by G. W. (Rock) Pring
3. Macroeconomic policy for mineral economies, by R. M. Auty
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Executive summary

Mineral policies evolve in response to geological resources, politics, economics and advancements in technology. The policy changes that take place are based on each country's unique combination of these and other internal and external factors. Trends can be identified for groupings of countries but the actual path of policy development and implementation varies widely from country to country. In some instances the policy may take the form of a stand-alone document but in many nations, an investor will need to interpret the policy from diverse sources of information. A published, stand-alone policy is a very useful regulatory tool that serves two important functions. First, it provides the mineral industry with a clear statement of the government's expectations and intent towards the industry. Secondly, it provides lawmakers and regulators with broad guidance.

Implementation of mineral sector policies is done through many agencies and administrative channels. An important part of the policy implementation framework is the body of laws that will statutorily effect the industry. Mining legislation takes the form of many different laws. In almost all instances, the mining code plays the central regulatory role but laws dealing with labour, safety, land, water, tax, foreign exchange, environment and so forth also enter into the picture.

Investment and government mining policy are closely linked. Even the most highly geologically prospective nations will have difficulty in attracting foreign investment without adequate national policy, regulatory and fiscal systems. Over the past few years the level of mineral sector investment has increased in real terms, and those nations that have put into place regulatory systems which reduce or allow a company to manage risks at an acceptable level have, for the most part, enjoyed increased levels of investor interest.

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INTRODUCTION

This paper investigates mineral policy, legislation and regulation from a government perspective. It begins by providing a description of some major mineral sector policy trends around the globe. Using a comprehensive national mineral policy framework, it then examines many of the policy topics that concern governments. The ways that policy can be implemented through legislation, agreements and administrative measures are explored before delving into the elements that comprise the key regulatory questions in a mining law. Attention is also paid to the form and structure of mining agreements, with a special focus on the negotiation of agreements. Finally, the relationship between investment and regulatory systems is briefly discussed.

I. EVOLUTION OF NATIONAL MINERALS POLICY

Mineral policies evolve in response to geological resources, politics, economics and advancements in technology. The policy changes that take place are based on each country's unique combination of these and other internal and external factors. Trends can be identified for groupings of countries but the actual path of policy development and implementation varies widely from country to country. In order to provide a general basis to better understand today's existing range of mineral policy and regulatory systems, it is useful to briefly examine the evolution of some key mining-policy trends in four country groupings -- European developed economies, the major mineral-producing developed economies, developing economies and transition economies.

A. European-developed economies

Historically, many European nations were large producers of a wide range of minerals. Sustained mining over the centuries depleted many known mineral deposits and locating new deposits has become increasingly difficult. With the exception of common construction minerals, most European nations are not perceived by exploration experts as highly prospective. The decline in geological prospectivity has been a cornerstone of recent changes in national mineral policies. For example, most European nations have greatly reduced the role and size of their geological survey departments over the past decade.

The increased globalization of world commodity markets has reduced the perception of policy makers that it is a necessity to achieve national self-sufficiency in minerals. In addition, economic diversification and increased job opportunities in other sectors have made it easier for workers in the mineral sector to find alternative employment. The substantial growth of environmental awareness has made mining less popular to both the public and politicians, and has resulted in the development of some of the world's most extensive (and costly) environmental laws. For these and other reasons, policies that provided various subsidies, protection and

economic incentives to the mineral sector have been increasingly eliminated or substantially scaled back.

While coal and base metals production has declined, the industrial mineral sector has prospered. The production of sand, gravel, clay and dimension stone now constitute the main part of mining activity in most developed European nations. Many of these operations are small although some large operations also exist. There has been a trend to decentralize regulatory control, at least in part, of these industrial mineral operations to local government.

B. Major mineral-producing developed economies

The United States, Canada and Australia are all major mineral-producing countries with good to excellent geological prospectivity. The United States is a net importer of minerals while Canada and Australia export more than they consume. Mining has been and continues to provide a substantial contribution to the economies of Australia and Canada.

In the United States most non-energy fuel minerals located on public lands are regulated under a mining code dating back to the late 1800s. The mining code was written in an era when the Government sought to affect the transfer of federal Government lands to the private sector. As the nation matured and the population increased, this objective faded away but the law still provides a means by which federal public lands become private lands. By staking and "perfecting" a claim, the successful locator of an economic deposit could permanently transfer the land and the minerals contained within it to himself without the obligation to pay any royalty for minerals later extracted. Although the code has been amended from time to time, the major policy shifts in the last several decades have not been made through revisions to the code. Today, by administrative fiat, a moratorium has been imposed on such claims.

Most non-safety and non-trade aspects of mine regulation in Australia and Canada are handled under State, territorial or provincial mining acts. Almost all of these acts are either relatively new or have undergone major amendment in the past decade.

In the United States, Canada and Australia an increasingly large amount of area is being closed to mineral claim staking. The largest of these land areas are places of significant natural beauty or areas that are particularly environmentally sensitive. There has been a clear trend over the past decade to accord mining a lower land-use priority.

Environmental policies developed over the past two decades have led to the implementation of regulations, permitting procedures, and controls (such as effluent standards) that impose significant costs on industry. In some instances these costs have acted as an incentive for companies to develop new, more environmentally sound technologies that have significantly lower costs than previous technologies (such as in the recovery of copper). However, the main cost imposed by tougher environmental policies can be measured in terms of time. In the United States and Canada, and to a lesser extent in Australia, the time to obtain the necessary permits to open a mine has lengthened and exceeds five years in many cases. In addition, time must be spent

complying with an ever-increasing need to report to multiple local, State and Federal Government agencies.

Increased environmental awareness, questions about the rights of native peoples, the development of politically astute non-governmental organizations (NGOs) and increased community involvement have all acted to affect security of tenure. Today, the discovery of a deposit in these countries does not assure that the discoverer will be able to mine the discovery, even though such an assurance is given or inferred in the mining law.

C. Developing countries

The developing economies include a very disparate and diverse set of countries, and the following observations and comments do not apply universally. However, the trends and issues identified are typical of those in many developing economies.

Many developing countries were previously under the control of a colonial power or substantially within its field of influence. Mining, other than small-scale mining of construction minerals, was, in many cases, restricted to a company or companies from the seat of power who operated under a charter on an exclusive or semi-exclusive concession basis which excluded companies from other colonial powers. Many of the mines operating under colonial systems existed as virtual enclaves providing little benefit to the country, its economy and its people.

With the coming of independence, many traditional colonial barriers to entry were lowered and the potential for increased foreign investment on a broad scale increased dramatically. Some nations embraced the concept of foreign investment and welcomed foreign involvement in their mineral sectors. However, most countries enacted new restrictions that precluded or acted to discourage foreign direct investment in mining. In most socialist developing nations, mining became a solely State-controlled and implemented activity. In many nations, policy positions on state sovereignty and control led to the creation of State mining enterprises (such as in Brazil, Chile, the Democratic Republic of the Congo and Zambia), to closure of the mineral sector to outside investors, or to restrictions on the level of equity ownership that could be held by foreigners (e.g., India, Mexico, Philippines, Andean Pact nations).¹ The result was that most free world mineral investment was centred in just three countries - Australia, Canada and the United States of America.

Over the past two decades there has been a dramatic change in the willingness of many developing and transition nations to accept major foreign investment in their mineral sectors. The reasons vary widely but include:

- lack of indigenous exploration and mining expertise and impediments to develop such expertise;
- inability of State enterprises to raise needed high-risk exploration and mining capital;

¹ For a concise treatment, see Radetzki, 1986 and Jodice, 1980.

- declining ore reserves requiring fresh exploration efforts;
- limited access to foreign exchange and the fact that foreign exchange servicing of bank loans to State enterprises is generally higher than servicing transnational investment;
- declining or negative mine cash-flows requiring State subsidies or cash injections;
- pressures brought to bear by the international community as a result of the debt crisis;
- an economy-wide move towards a free market orientation through an expanded private sector;
- lack of access to new technology in the face of increased technology efficiency elsewhere;
- increased competition for State investment from more labour intensive sectors of the economy; and
- realization that the mineral endowment was not being developed at an optimal pace (Otto, 1996).

The willingness to accept foreign investment prompted major policy shifts. Governments have increasingly recognized the global nature of mineral markets and the ability of companies to pick and choose their investment targets in other nations.

Many developing nations have recently enacted modern mineral legislation or made major amendments to existing laws, entered into bilateral investment or tax treaties, joined MIGA or qualified for OPIC insurance, and revamped geological surveys. An increased emphasis has been placed on government activities which actively promote investment.

D. Transition economies

The dissolution of the USSR has resulted in a movement to transition the mineral sectors in many socialist economies toward a more market-oriented perspective. The rate of transformation has been varied with some nations now completing the process and others just beginning.

Regulatory systems are complex and while changes may occur in some laws, changes in others will lag behind. It will take years, perhaps several decades, for well-integrated systems of law to emerge that will address the many regulatory matters associated with mining. To date, the Eastern European nations are further along in their transition process than are Russia and the central Asian republics.

From a policy perspective, there is little in common between market-based and centrally planned exploration and mining. While some countries are seeking to privatize State-owned enterprises, others are seeking to continue State mining but under market-based objectives. Significant political, economic, technological and social obstacles will need to be overcome to create efficient, globally competitive regulatory systems.

In many of the transition economies, substantial prior exploration by State agencies identified potentially economic deposits. Efforts to market these deposits through bidding processes have met with generally unfavourable results. One reason for this has been that although companies might perceive they could acquire mining rights at a reasonable price, the

infancy of the overall regulatory system left them susceptible to too many regulatory risks. Some transition countries have chosen to use negotiated agreements in order to partially mitigate this problem.² A second problem has been that government negotiators are not fully aware of what comprises a fair deal in today's global market place. Many attempts at negotiations have failed because of government requests for free equity, mandatory sales of product to the central government, bonus payment requirements, imposition of extensive social obligations, liability for previous environmental damage, and so forth.

The broad policy trends identified above reflect a composite of developments in individual nations. In the next section, a look is given at the many types of issues that comprise a national mineral policy.

II. MINERAL POLICY LEGISLATION

A. Role and importance of a national mineral policy

Every nation has a mineral policy. In some instances the policy may take the form of a stand-alone document but in many nations, an investor will need to interpret the policy from diverse sources of information. Examples of mineral policies that take the form of an official document can be found in Canada, India, Malaysia, Pakistan, Sierra Leone, etc.

A published, stand-alone policy is a very useful regulatory tool that serves two important functions. First, it provides the mineral industry with a clear statement of the Government's expectations and intent towards the industry. Secondly, it provides lawmakers and regulators with broad guidance. The following section introduces and explores government mineral-sector objectives that might be considered either as part of a publishable national mineral policy or as individual policy objectives.

B. Objectives of minerals policy

Objectives of national mineral policies vary widely reflecting the unique circumstances of each nation. Countries with few mineral resources but requiring substantial mineral inputs -- such as Japan, The Republic of Korea and Taiwan Province of China -- will obviously emphasize different objectives than a mineral rich non-industrialized nation -- such as Papua New Guinea, New Caledonia, or The Democratic Republic of the Congo. Likewise, large mineral producers with substantial internal demand, such as Brazil, China, India and the United States, have their own policy approaches.

² Such as the negotiated agreement between Newmont Gold Company and the Government of Uzbekistan regarding a gold deposit.

While each nation's mineral policy is unique, it is possible to broadly categorize the types of topic common to many policies. In a recent study of mineral policies (Otto, 1997), it was determined that many policy objectives fall within the following six categories: scope, sovereignty, economics, quality of life, legislative framework, and regulatory agencies.³ Examples of the types of topic within each category are described below along with the author's view of topic trends and recommendations for individual issues.

1. Policy scope

a) Types of mineral activity

The production of a mineral commodity involves a progression of one, or more, of the following activities: exploration, mining (such as extraction of ore containing copper), beneficiation or other primary treatment (such as production of copper concentrate), processing to a raw state (such as smelting and refining of copper metal), processing to an intermediate state (such as extruding copper wire), and production of a final good (such as producing insulated copper wire). Most mineral policies address only the first three stages leaving later stages to fall within industrial or other policies. The policy should clearly state what stages of production are subject to the policy.

b) Types of mineral

It is not uncommon to exclude some minerals from the general mineral policy. The most common mineral excluded is water which may have its own unique policy framework. Energy minerals such as oil, gas and coal are also usually subject to a separate policy framework. Radioactive minerals, because of their potential health and security problems, may fall within a unique regulatory niche. More rarely, industrial minerals such as sand, gravel, clay and dimension stone will also be handled separately. The mineral policy should clearly delineate which minerals are covered and which are not.

c) Relationship of mineral policy to other national policies

A national policy framework is composed of many policies, some of which are interlinked. For example, a gold mine could be affected by the following policies: mineral policy, water policy, labour policy, foreign exchange policy, balance of trade policy, environmental protection policy, etc. While these policies should complement and supplement one another, it is inevitable that some discrepancies and conflicts will occur. On any one topic, determining which policy has precedence may be difficult. To the extent possible, the mineral policy should state its relative relationship to other policies.

³ See treatment by J. M. Otto (Otto, 1997).

2. Sovereignty

a) Role of government in investment decision-making

In almost all countries, government plays a role in mineral-sector investment decision-making. Where the mineral activity is undertaken by the State, perhaps by a State enterprise, the role is direct. If the activity is by the private sector, the State still executes two types of important function. First, the State lays down the regulatory and fiscal framework that will affect private-sector investment. Thus, the State directly or indirectly determines at least some investment climate factors. Secondly, the State often fills the role of gatekeeper. Without government acquiescence, in the form of granted licenses, leases, permits and concessions, investment cannot move forward.

b) Role of State enterprises

The extent to which the government is directly involved with the exploration, mining and processing of minerals is a key part of a mineral policy and has been the subject of much debate. The rationale for direct State participation in the industry varies, ranging from the basic tenants of the underpinning economic system (socialism) to more immediate objectives such as self-sufficiency, sovereignty, employment, and mobilization of capital.

Exploration and mining are risky and competitive. The trend in the 1990s has been a dramatic shift away from exploration and production by State enterprises. Many governments have instituted privatization policies, and have, or are now, transferring enterprise ownership to the private sector. Examples of this shift can clearly be seen in many nations including Argentina, Brazil, Zambia, United Kingdom, Peru, Bolivia and Chile.

While the overall trend has been to leave exploration and mining to the private sector, many exceptions exist. In socialist nations (China, Cuba, Democratic People's Republic of Korea), transition economies (Kazakhstan, Uzbekistan, Poland, Ukraine, Russia, Viet Nam) and countries concerned with self-sufficiency (India) or revenue (Myanmar), substantial mineral activity by State enterprises persists.

The decision to move towards private ownership of mineral activities can be difficult to implement. In moving to a lesser reliance on State enterprises, government policy may follow a two-step approach. The first step is to allow and provide for private ownership of new mineral ventures. The second step, which is more difficult, is to transfer existing operations out of the State domain. State enterprises rarely have all the same objectives as a private enterprise. When these objectives change, the impacts on the local populous -- the electorate -- can be substantial. Operations may be closed, redundancies on a massive scale may result, and satellite enterprises such as schools, day-care, housing and factories may be affected.

c) Mineral ownership

Minerals belong to the State in most nations.⁴ Through various legal processes this ownership interest is passed to the private sector. It is important for a mineral policy to describe this process. In some nations mineral ownership passes at the time the mining authorization is issued, in others it passes at the time the mineral is extracted, or when taxes are paid on extracted minerals.

Most large-scale mines are debt financed and the mineral ownership issue can affect lenders' decision-making. If the minerals do not belong to the mine at the time a loan is sought, then the mine cannot mortgage those minerals. You cannot mortgage property that you don't own.

d) Foreign participation

The fundamental question with regard to foreign participation in the mineral sector is whether the government will allow it, and if so, will it be regulated the same or differently than mining by citizens. A mining policy should address these issues.

e) State equity requirement - a means to exert ownership and control

A mineral policy should clearly state whether the State will take an equity interest in a minerals operation and at what stage in the mineral development sequence it will acquire that interest. While a State interest may share in project dividends, revenue generation is not the main reason nations elect to take an equity stake -- governments can use their tax power to obtain revenues more directly and with less risk. Nations that take an equity interest often do so for reasons related to an expression of sovereignty. By becoming an active or inactive partner in a project, the State can demonstrate that the national endowment, the nation's patrimony, is not exploited away by a foreign entity.

The trend in the 1990s has been for States to not take an equity stake in mining ventures. There are exceptions. In Papua New Guinea, the Government has an option to take a paid equity share in large projects. In Mali, the government may take a carried interest equity share, and in Ghana and francophone Africa, Governments may require a free equity government share.

If a government does require an equity share, the mineral policy should indicate what the upper level of that share is, whether the share will be taken at the exploration, development or mining stage, the nature of the equity interest, and how the interest will be valued.

There are three main types of government-mandated equity: paid, carried interest, and free. Paid equity refers to the situation where the government participates, to the extent of its shareholding, in all risks, costs and profits of the operation. Carried interest equity is slightly more complicated. The government obtains a shareholding but the liabilities attached to that shareholding are borne initially by the non-government shareholders. Those shareholders are later repaid out of the government's future dividend share. There is a lag between the time the non-government shareholders pay the government's liability portion and when they are repaid. If the

4 The United States and South Africa are two important exceptions.

arrangement recognizes the time value of money, the government's liability to the other shareholders will be adjusted upward at a set or variable interest rate. If the arrangement does not provide for the time value of money, the earlier payments made to cover the government's shareholding are in effect an interest-free loan to the government. This arrangement is known as a free carried interest. Lastly, there is the case of free equity. The government obtains its shareholding free of any of the project's risks and liabilities but shares in the project's revenues and management. There are many variations of these three approaches.

f) Local joint venture or other equity requirements

If a State does not require government participation in a project, it may still require a local ownership component. While this is not common worldwide, some nations seek to avoid criticism that the national mineral endowment has been given away to foreign entities. Nations also see local private-sector involvement as a way to diversify the economy and to transfer technology and skills to local companies. A mineral policy should describe any required local participation requirements.

One of the obstacles in implementing a policy requiring a percentage of local equity is that it may be difficult or impossible for a foreign mining company to find a suitable, financially able partner. Additionally, if a local share market does not exist, the company may be unable to sell shares to the public. In many stock markets, only an existing venture with a proven track record and adequate profits may be granted a listing.

If the policy requires greater than 50 per cent local equity, most transnational mining companies will not invest. Their boards of directors will be highly resistant to any project in which the company does not retain management control. While there are ways to de-link equity share and control, such as through the use of non-voting classes of stock, the two are usually related. When the Andean South American countries dropped their Andean Pact related majority local share rule in the early 1990s, investment by foreign mining companies soared. Likewise, Brazilian and Philippine mineral sector investment increased dramatically when foreign companies were allowed to take on up to 100 per cent ownership.

Mining companies do not necessarily negatively view a minority local ownership share requirement. In a 1992 United Nations survey of transnational mining companies, over half the respondents indicated that a requirement for such a share would not be viewed as a disincentive to invest (Otto, 1992b).

3. Economics

a) Taxation types, levels and distribution

The mineral policy should identify the major forms of taxes payable by a mineral venture and describe, generally, the major types of incentives and deductions allowable for computing taxable income. Taxes commonly levied include the following: income tax; royalty tax; withholding tax on dividends, loan interest and consultancy work; land area related fees; application and renewal fees; property value taxes; payroll taxes.

Thought is increasingly given to who should be the recipient of tax receipts. There is a growing demand for a greater percentage of the total tax take to be distributed, either directly or indirectly, to communities and peoples directly affected by mine operations.⁵

b) Export restrictions, costs, incentives

The nation's export policy should also be reflected in the mineral policy. In the past, many nations imposed various forms of export controls or levied taxes and fees on exported minerals. In order to promote downstream processing, higher export duties were levied on raw ores and concentrates than on metals or semi-manufactures. In order to achieve self-sufficiency, exports of economically strategic minerals may have been banned, restricted or highly taxed. In some instances, such as in the case of tin, national export quotas may have been applied. With respect to gold, many governments did not allow its export and some required that it be sold to the central bank or other designated government agency. During the 1990s, most of the above export controls have been eliminated or considerably scaled back. This clearly reflects the 1990s' globalization of commodity markets in general which have seen the reduction of export controls and duties for almost all types of good. Some governments still seeking to add value to minerals production through downstream processing have moved away from a penalty approach and now provide economic incentives to encourage companies to process locally. Export trade in radioactive minerals remains closely controlled in some nations.

c) Import restrictions, costs

The globalization of the world economy has also affected government restrictions and costs on imported minerals and goods used to produce minerals. In the past, some governments imposed high levels of duty on imported mineral commodities in order to protect domestic producers. This promoted self-sufficiency and allowed "infant industries" time to develop in a less competitive environment. Additionally, where the mineral sector was of substantial size, governments may have imposed high levels of duty on inputs to production -- drilling and mining equipment, spare parts, etc. -- to promote the local production of these goods. During the 1990s, import restrictions and costs have been effectively eliminated or reduced in many nations. Where import duties remain on capital equipment, it is now often possible to obtain some form of exemption from duties during a defined construction and development period. The mineral policy should lay out the nation's import policy as it affects mineral producers and importers.

d) Role in economic development

Mining can play an important role in economic development. On a local level, the construction of a mine may provide new infrastructure such as roads, power, schools and medical facilities. It will provide employment opportunities both directly and indirectly. While a mine can substantially enhance the local economy, it can also introduce changes and effects that will effect

⁵ In nations with a federal system of government there has been an historic struggle between federal and State/provincial governments as to the "correct" balance of fiscal distribution. More recently, the distribution debate has intensified as NGOs and others have sought to see impacted communities and peoples receive greater fiscal benefits from mines. Mining companies do not inherently see such a redistribution as a negative factor; some openly support it, but are concerned more with total tax take than with distribution issues.

the existing social order and traditional economy. Mine closure may render many jobless and lead to the failure of dependent enterprises.

On a national level, fiscal income from the mining sector will add to the treasury of the nation providing the opportunity to accelerate development. However, if the mineral sector contributes a major part of the nation's fiscal revenue, then market factors, such as price fluctuations, may result in budget instability. If the portion of revenue raised from the mineral sector is spent on recurring costs, such as increased government employment and social entitlement programmes, then downturns in the mineral markets may leave the government with periodic budget deficits.

There is disputed evidence that countries with large mineral sectors develop more slowly than other countries. It is generally agreed by economists that if a major portion of an economy is minerals led, a substantial part of the derived government income should go towards capital expenditure in infrastructure or towards promoting economic diversification. The development of a large mining sector can also impact the availability of capital and expertise for other sectors of the economy -- local capital and labour invested in the mineral sector is not available to other economic sectors.

Mineral sector investment will have a developmental impact both locally and nationally. Governments have a variety of policy options that they can impose to channel or enhance development. A few examples are provided below.

Some governments impose a "localization" policy with regard to goods and services in order to create linkages to other economic sectors. For example, under the Indonesian contract of work, a mine will be required to use local goods and services, rather than imported goods and services, if they are of adequate quality and are competitively priced. Another example of an economic linkage is where a government requires that a given proportion of a mine's foodstuffs be acquired from neighbouring communities.

Mines are often located in remote or underdeveloped regions. For larger operations, the government may require the operation to be planned in such a way as to coordinate with and enhance local infrastructure development plans. For example, the OK Tedi copper-gold mine in Papua New Guinea worked together with the government to obtain funding to construct a road to the mine which made a remote region accessible for other types of economic activity. Likewise, coordinated construction of the road to the Mamut mine, in Malaysian Borneo, provided access to the now popular Mt. Kinabalu park and provided a way for village-produced agricultural and handicraft goods to reach new markets.

To the extent that a government requires a mine to aid in local development, the mineral policy should describe those requirements.

e) Employment requirements

The concept of "localization" also applies to mineral sector employment. Usually requirements to hire nationals or locals do not apply at the exploration stage but may be imposed on mines and downstream processing operations. The requirement may be levied directly by law

or agreement, or can be implemented indirectly through work permitting procedures. For technical staff, particularly accountants, geologists and engineers, some countries require that they be professionally certified and licensed in the country (such as in Poland).

A common way to achieve employment localization at large negotiated mining projects is for a timed quota to be set for a number of different worker categories. Over time, the allowed percentage of expatriates in any one category is reduced. This may be coupled to a mine employee training plan that is submitted annually to the government for review and approval - such as in Indonesia and Papua New Guinea.

The development of a mine can lead to new job opportunities that may cause a transmigration of workers from part of the country to another. This may cause resentment in communities neighbouring the mine. If these workers come from a different social system, tribe or religion, the potential problem may be acute. Some governments seek to control or minimize possible transmigration-related problems by imposing hiring restraints and conditions on mines.

f) Conservation and efficiency

In most nations, minerals are the property of the State implying a duty of stewardship to see that the resources are developed efficiently. The extent to which the government will intervene in mine production decision-making, if at all, should be identified in the policy. In most nations, the mine size, life and economic ore cut-off grade are determined by the mine with no direct government intervention. However, some nations take a more active role to ensure that known deposits are developed in a timely manner and mined so that optimal recovery, from the State's viewpoint, is achieved. Practices such as high-grading -- taking only the highest grade ore at the outset leaving lower grade ores uneconomic to mine - can be largely avoided through government intervention.

Countries that implement interventionist policies through the mining law usually do so through the use of approved mine plans or feasibility studies. The miner is required to submit a mine plan prior to being granted the right to mine, and that plan will propose the mine life, annual production schedule and cut-off grade which the state may accept or reject. Once the parties are able to agree on the mine plan, the State then grants the authorization subject to attached production related conditions. Any deviation from the plan must subsequently be approved by the State. In the case of a negotiated mine agreement, production requirements may be spelled out in the agreement. The clear trend over the past decade has been for governments to take less of an interventionist approach, leaving production related decisions to the mine.

g) Land use

Exploration is a means by which to determine land use, and mining is a land use. Once mining commences on a piece of ground other economic uses for that land will cease or be precluded. Government policies dealing with economic land use issues are thus more oriented towards mining than towards exploration. Aside from environmental considerations, governments have two main concerns related to land use - revenues and compensation.

Most governments tax land use. Regardless of the type of activity (agriculture, industry, mining) some sort of levy is collected. The most common form of land-use tax is based on an annual charge calculated by multiplying the size of the area concerned by a set fee per unit area for that type of economic activity. An alternative tax, sometimes simultaneously collected, is based on the assessed value of the land or real property.

Compensation issues arise when a deposit is located in land that has an existing economic use which is incompatible with mining. The foremost issue for government is: which land use has highest priority? This should be clearly spelled out in the policy and reflected in the mining or land law. If the land user has a legal right to that use, most legal systems will require that if mining commences, the land user must receive compensation. The means by which the level of compensation to be paid is determined, if agreement cannot be reached privately between the mine and the land user, should be set out in the policy and implemented through provisions set out in the mining or land law.

4. Quality of life

a) Social impact

A mine can have a substantial social impact on local communities and people. Some impacts would be viewed as positive, some as negative, depending on one's point of view. For example, if the mine is located in an undeveloped, subsistence farming area, the economic linkages created through mine-paid wages and purchases may dramatically alter traditional value systems. Some would view the move to a more money-oriented economy as a sign of positive development, others as an evil erosion of the cultural fabric and heritage. Governments who view mining as a positive developmental influence may adopt policies that seek to maximize local community linkages with a mine, while governments who fear social impact consequences, may require that it be operated as an enclave (such as a fly-in, fly-out operation).

Many mines employ young unmarried men. With the influx of the new workforce, which will have excess wages to dispose of, comes the potential for increases in alcohol consumption, prostitution, gambling and the possible development of dependent squatter camps. If given attention by the government and the mine, problems such as these can be avoided or reduced.

One of the largest impacts that a mine can have on communities and people is the severing of economic and service ties when the mine closes. Over time, at least some people and businesses will become dependent on the mine and will suffer when it closes. Minerals are a wasting asset and eventually every mine must close. The clear policy trend today is towards a more regulated, planned approach to closure.

b) Environment

There are many issues relating to mining and the environment, and in this section only a few key policy issues will be superficially introduced. For a more detailed description of environmental issues, see the paper in this series on environment.

From a policy perspective, environmental challenges result from three categories of mining operations - abandoned mines, existing mines and future mines. Each category may require separate regulatory approaches.

Abandoned mines can pose significant problems including acid drainage, tailings dam failures, dangerous open pits and shafts, etc. Since there is no longer an operator, government policy options to pay for fixing problems are somewhat limited. It can seek recourse through successors to the company that operated the mine (if one can be located), allocate funds through the general budget process, or assess and pool special charges on currently operating mines.

Once a mine is built and operating it may be impossible or too expensive to require it to install a new technology or mining method. For example, once a tailings pond is full of tailings, it would be impractical to then require it to be lined. Thus, policy questions arise as to what requirements can and should be levied on existing operations, and should these be different from those required of new operations.

Another policy challenge is to decide which government agency will be responsible for environmental enforcement. Attempts by many developing countries to enforce environmental laws through a Ministry of Environment have progressed only slowly due to a lack of adequate budget, manpower and training. Because mines are often located away from urban centres, monitoring and inspection costs can be high. Mines pose unique environmental dangers, and specialist officers will be required. Departments of mines' officers may be uniquely positioned to act in an enforcement role but are often perceived to be too industry biased.

Finally, will the government take a command and control approach linked to penalties in order to affect environmental policy, or will it offer economic incentives to encourage companies to act on their own?

5. Legislative framework

There are many legislative framework issues that can be included in a national mineral policy. Several of the major issues are identified in this section; other, more detailed, issues are illustrated in the subsequent sections specifically devoted to mining laws and agreements.

a) Applicable laws

The policy should describe the main laws that regulate the mineral sector, and discuss the general principles of determining which law will take precedence in case of a conflict of laws. Where both central government and provincial laws apply, it is also useful to identify and describe the relevant subject matters within the purview of different levels of government.

b) Exploration/mining rights regulatory approach

Most national mineral policies describe the basic approaches by which exploration and mining rights are awarded. The types and purposes of license, lease, concession and other authorizing documents are described and reference is made to whatever law(s) regulate them. If there is a regulatory distinction between scales of operation, this should be described.

One of the most difficult aspects of mineral-sector regulation is small-scale mining. Until recently, many nations considered such activities illegal. There has been a pronounced trend to recognize the valuable contributions, and dangers, that small-scale mining can make to local economies. Attempts to legitimize small-scale mining have produced mixed results.

c) Exploration and mining application priority

There are many regulatory systems used to award exploration and mining rights. A central policy question in the granting of such rights is the manner in which priority is given to conflicting applications, i.e., where the area applied for by one applicant overlaps that applied for by another applicant.

One of the simplest systems is based on the "first-come, first-served" principle. In the case of any area overlap, the applicant who applies first receives the grant as long as the applicant meets minimum non-subjective statutory requirements. A variation of this approach is the "first-come, first-considered" method. Under this method, the first application received is considered first and is either given the grant or rejected before any subsequent application is considered. The application may be rejected based on subjective criteria such as whether or not the applicant is technically and financially able to carry out the work. If the application is denied, then the next in time application is next considered.

In contrast to "first in time" approaches are systems where the granting authority has discretion to choose the best qualified applicant. If there are a number of applications for the same area, the authority weighs the merits of each applicant and makes the grant accordingly. Troubles sometimes arise in such systems. Officials given this type of discretionary power may be subject to certain pressures to decide one way or another. For example, in one South-East Asian nation a multinational mining company applied for an exploration area. Word got out and several local powerful businessmen applied for the same area. Then a member of the royal family applied for the area. Within a month over thirty applications were received for the same area. The granting official, fearing the wrath of unsuccessful applicants, did not act to render a decision. While this example is extreme, it does illustrate the main problem inherent in discretionary granting systems.

Systems based on bidding can resolve conflicting application situations. However, the granting of exploration or mining rights by use of a bidding system is extremely rare world wide. Countries using this approach on a limited basis include some of the newly independent central Asian nations and other transition economies. Bidding approaches have been used successfully by many countries to award oil exploration tracts, but attempts to apply the technique to non-petroleum mineral exploration and mining have largely proven unsuccessful.

d) Security of tenure

The term "security of tenure" relates to the stability of rights granted to implement different phases (exploration phase, development phase and the mining phase) of the mining sequence. Governments have an interest in seeing deposits developed quickly, efficiently, and once mining commences, in ensuring continuity of mining. Companies have an interest in timing start-up and maintaining operations according to market conditions and corporate restraints. The

following description is drawn from a previous and more detailed paper written by this author (Otto, 1995a).

The security of tenure question during the exploration phase is: once exclusive exploration rights are granted, how can these rights be terminated or expire? Companies granted such rights will want such rights to be secure for a time period appropriate to determine whether or not the allotted ground contains commercially interesting ore bodies. Governments are concerned that if exclusive exploration rights are granted, then the company should proceed in a timely manner to explore the property and if it doesn't, then the ground should be made available to other possible prospectors as soon as possible. Governments have many methods by which to control the time allotted to exploration, with the most obvious being the length of time granted before the exploration rights automatically lapse and cancellation of the right for non-fulfillment of exploration obligations.

In many jurisdictions, once an ore body is discovered an application is made to obtain further rights to develop and exploit the deposit. Governments may place a high priority on assuring that discovered ore bodies are brought into production quickly. In contrast, companies will want to bring a property into production only after it is estimated that the project will be sufficiently profitable. Thus, the company will need time to undertake a variety of assessments (pre-feasibility and feasibility studies, bulk sampling and metallurgical testing, engineering and environmental studies, marketing and sales studies, financing arrangements, etc.) and to build the mine. In some cases these studies may be quite detailed, extensive and time consuming, particularly in situations where the deposit is located in a remote area lacking supporting infrastructure. In other cases, market or political conditions may preclude near-term development. The transition between the discovery of a deposit and the obtaining of mining rights is of major concern to companies. In surveys ranking mining company investment decision criteria, security of tenure is consistently ranked towards the top of the list (Johnson, 1990; Otto, 1992a and b). The dilemma then for governments is if and how to time governmental approvals and impose time limits during the transition phase between exploration and mining.

Lastly, once mining rights have been granted, how can such rights be lost through government action or expiration of the grant? Governments have an interest in seeing a continuity of mining operations from projects and if production ceases, in taking such steps as may maximize the potential for the mine to restart production. Companies, on the other hand, also have an interest in a continuity of mining but only if such operations can be maintained profitably. Perhaps the most difficult policy question here for a government is: if production stops during a price downturn, should mining rights be terminated?

Of the security of tenure questions posed above, the one most commonly addressed in a national mineral policy is the one linking the transition from an exploration right to a mining right. Companies will hesitate to invest in costly exploration unless there is a reasonable assurance that if they discover a deposit, they will be able to mine it. Companies expect a reasonable level of government oversight and the need to first comply with legitimate government requirements (such as submission of an environmental impact assessment) before being granted the right to mine. The policy should clearly state the government's position on the security of tenure during the transition from exploration to mining.

6. Regulatory agencies

a) Role of government agencies

Under most regulatory structures, the mineral sector will interact with and be regulated by a number of different government agencies. A mineral policy can assist investors by indicating the respective roles of the various relevant government agencies. Such roles usually exceed the regulatory role that focuses on implementation and enforcement of statutes. These other roles may include: promotion of mineral-sector investment; development of improved mining methods and technologies; exploration and resource/reserve delineation; provision of information; worker or community assistance; liaison functions; and so forth.

b) Information availability

A key component of many mineral policies is the treatment of information collection and dissemination. Issues that can be addressed in the policy include: the information role of government agencies; ownership of geological information; exploration reporting needs and requirements; mining reporting needs and requirements; confidentiality and accessibility of information submitted by a company to the government; information and reports to be generated by government agencies; cost to acquire information from government agencies (nominal amount, amount to cover costs or maximum the market will bear); avoidance of duplicative activities; exploration and mining investment promotion; etc.

III. FORM AND CONTENT OF MINING LEGISLATION

Implementation of mineral-sector policies is done through many agencies and administrative channels. An important part of the policy implementation framework is the body of laws that will statutorily affect the industry.⁶ Mining legislation takes the form of many different laws. In almost all instances, the mining code plays the central regulatory role but laws dealing with labour, safety, land, water, tax, foreign exchange, environment and so forth also enter into the picture. A discussion of all the various means by which government regulates mining enterprises is beyond the scope of this study. In this section, the main focus will be on the general mining law and specific types of regulatory agreements.

Between 1985 and 1995, over 90 nations adopted new mineral codes, made a major revision to their codes or were working on draft legislation. In a study of the changing nature of mining laws (Otto, 1996) it was found that the approach to the central mining law framework varied considerably from country to country but three typical approaches were identifiable: (1) exploration and mining rights derive from an authorization granted in a licence, lease or concession granted under a law of general application specifying uniform rights and obligations for each class of mineral tenement; (2) terms are set out in a model agreement which supplements or supersedes the general mining law; and (3) terms are negotiated in an ad hoc agreement which

⁶ Another important policy implementation tool is administrative practice and procedure.

may either supersede or supplement the general mining law. Many different approaches have been developed under these and other basic legal frameworks.

A. General mining law

As mentioned above, the general mining law, and to a lesser extent mining agreements, play the central role in government regulation of the mineral sector. Mines, regardless of where they are located, generate similar types of challenges for governments. It is therefore perhaps not surprising that there is similarity in the content of such laws. However, the form in which that content is held and implemented will vary. In a study done on mining law in 1980, the United Nations Economic Commission for Africa identified two principle types;

"Some countries pay more attention to the legal aspect, to ensuring that operations are in accordance with the form and that the solutions selected are of general application; others are more inclined to concentrate on pragmatic solutions worked out sometimes on a case by case basis, even if they do not fit in with the established framework." (Legoux, 1981, p. 69)

These two variations in approach reflect the impact that "common" and "civil" law traditions have had on legal systems in various countries. To some extent there has been a convergence of legal approaches since the 1980 United Nations study although significant differences do remain.⁷ Some of the main differences important for understanding mineral-sector regulation are described in the section below that deals with mineral agreements. A number of recent studies have provided a detailed comparison of the two fundamentally different approaches to the legal system (Barberis, 1996; Brown, 1986; Loncan, 1991; Kensicher, 1991).

Mineral-sector investors will address key questions that are useful in assessing mineral regulatory system risks. In a paper prepared for the Institute of Mining and Metallurgy, this author sought to identify investors' key questions (Otto, 1995b). The subset of questions from that paper reproduced here is not exhaustive nor complete but does indicate the types of regulatory risk question mining companies ask. The questions that a company would pose in any given situation would depend on the objectives of the company and on the specific nature of the investment. By understanding how investors look at a law, a government is better positioned to satisfy investor concerns within the context of meeting government policy objectives.

The following questions have been ordered in two sets. The first set contains questions which relate primarily to factors that in most jurisdictions fall outside of the purview of the mining law while the second set, which are more specific, can usually be answered by reference to the mining law, related subsidiary legislation and administrative practice. It should be noted that in countries where a comprehensive mining investment agreement is allowed and which can supersede statutory law, that many of the questions posed in each question set might be addressed in the agreement.

⁷ A study by Barberis (1996) traces the evolution of mining laws and agreements over the past thirty years.

Sample questions relating to regulatory matters outside the mining law:

- Does the country have a mineral policy?
- Has the Government's approach to the regulation of investment in the mining sector been consistent and predictable?
- Are there any restrictions on the ability to repatriate profits?
- Are there realistic foreign-exchange regulations?
- Is it legal for the company to maintain external accounts to pay creditors, suppliers and share-holders?
- Is it possible to predetermine the types and levels of taxes on mining?
- How stable is the fiscal regime?
- Are there any duties, restrictions or requirements regarding the importation of equipment and supplies which would impact a project?
- Are there any export duties, restrictions or requirements which will affect the ability of the mine to sell into the international market?
- Is the country a signatory to any bilateral investment or multilateral investment treaties or accords?
- Is it possible to predetermine to what extent a mining company will have environmental obligations? Will the level of obligations change in the near future?
- Can an ad hoc mining agreement be used to supplement or supersede the general mining law?
- Are there factors unique to the country which will hinder the ability of the company to raise financing from lenders?
- Are there any restrictions which will make it difficult to apply geological assessment techniques such as airborne surveys?
- What special restrictions apply to foreign investment in the mining sector?
- Does the law allow the company to maintain a majority equity ownership position?
- Are foreign companies allowed to maintain management control?
- Is the linkage between the mining code and the general laws governing land well established?
- Are other relevant legislation and administrative structures well integrated and workable?
- Are there any restrictions on hiring and firing staff and on setting their level of wages?
- Are there any restrictions on bringing in expatriate specialists?
- Is there a policy prohibiting access to international arbitration?

Sample questions relating to regulatory matters commonly addressed in the mining law:

The questions in this section have been organized to indicate problem issues at each stage of the mining sequence.

Exploration period

Application

- Are application procedures clear?
- Who may obtain an exploration right?
- How long does it take to obtain approval/disapproval?
- Can a company determine what areas are open for exploration?

- Is exploration a priority land use?
- Are geological and historic mining records open for inspection?
- Are records filed in a systematic, useful manner?
- Does the first applicant for an area have priority?
- Is the approval authority clearly defined?
- Does the approving authority have sufficient authority to grant an effective exploration right?
- Is there an established and accessible mineral titles system?

Size of area

- Are there limitations on the maximum size of area for which exploration rights can be granted?
- Does the size of area allowed make sense given today's exploration technology?
- Must area be progressively relinquished?

Duration

- Is the duration of the exploration right suitable for the area?
- Is the right renewable? If so, is renewal automatic or discretionary?

Reporting requirements

- Are reporting requirements reasonable?
- What assurances are there that the reports will be kept confidential during the exploration period?

Obligations

- Are the obligations of the holder of the exploration right clearly defined?
- Are the obligations reasonable?
- Is a performance bond required?
- Is a work-plan required? If so, who is the approving authority? Is there a means for resolving a dispute?

Rights

- What rights does a right of exploration confer?
- Are the rights exclusive within the exploration area? Can others be granted exploration rights over the same or an overlapping area?
- Are exploration rights restricted to a single mineral or do they apply to all minerals?
- Does the right extend to all types of land within the exploration area (private, State, forest, ...)?

Transferable

- Is the exploration right transferable?
- If so, what restrictions apply?
- Are transfer procedures clear and practical?

Cancellation and suspension

- Under what circumstances can the exploration right be cancelled or suspended?
- Who may cancel an exploration right?

- Is there an appeal process?

Transition period

- Who has legal ownership of minerals in the land?
- Who may obtain a mining right?
- At what point may an exploration right be converted to a mining right?
- Is the right to apply for a mining right guaranteed at the exploration stage?
- Is mining a priority land use?
- Are the application procedures clear?
- Is it clear who has the authority to grant a mining right? Are there any limits on discretionary approval authority?
- Is a feasibility study required? Must the government approve it?
- Is an environmental impact assessment required?
- How long does it take to obtain approval/disapproval?
- Is there an avenue for appeal should the mining right not be granted?
- Does the mining legislation supersede other legislation such as the land law?
- Are there clear procedures to resolve land use conflict?
- What requirements must be met before mining may proceed?

Development period

- What regulatory requirements may delay construction?
- Are permits required from multiple agencies?
- Are import duties reasonable on mine equipment?
- To what extent is local sourcing required?
- How long a period is allowed for development?
- To what extent can the government control the technical design of the mine?

Mining period

Size of area

- How is the size of the mine area determined?
- Is there adequate protection to accommodate for all necessary mine workings, tailings areas and dumps?

Duration

- Is the duration of the mining right suitable for the deposit?
- Is the right renewable? If so, is renewal automatic or discretionary?

Reporting requirements

- Are reporting requirements reasonable?
- What assurances are there that submitted reports will be kept confidential during the mining period?

Obligations

- Are the obligations of the holder of the mining right clearly defined?
- Are the obligations reasonable?

- Is a performance bond required?
- Is a production plan required? If so, who is the approving body? Is there a means for resolving a dispute?
- Are there training requirements for nationals?
- Are all taxes easily identifiable?
- Are all taxes reasonable?
- Are all taxes non-discriminatory?
- Are all taxes stable?
- How are disputes over taxes resolved?
- What environmental protection criteria must be met?
- What liability may be incurred by the company or its directors with regard to environmental requirements?

Rights

- What specific rights does a right of mining confer?
- Are the rights exclusive within the mining area? Can others be granted mining rights, perhaps for another mineral, over the same or an overlapping area?
- Are mining rights restricted to a single mineral or do they apply to all minerals?
- Does the right include the right to use water, sand and gravel, and timber in the mining area for the purposes of mining?
- Are there any restrictions which will impede the sale of the mine product to the best paying customer?
- Are there any restrictions on the use of specialist expatriate staff?
- Are employment requirements reasonable?
- Can the holder of the mining right have management control of the operation?
- Do rights under the mining law supersede those of others granted under other laws?
- Are rights granted under the mining law subject to any restrictions arising out of other laws?

Transferable

- Is the mining right transferable?
- If so, what restrictions apply?
- Are transfer procedures clear and practical?

Cancellation and suspension

- Under what circumstances can the mining right be cancelled or suspended?
- Who may cancel a mining right?
- Is there an appeal process?

Reclamation period

- Are there any requirements for reclamation? Are they reasonable?
- Is a reclamation bond or similar instrument required?
- Are requirements stable or will they increase in the near future?

Dispute Resolution

- Are procedures to resolve disputes between the government and the investor clearly identified?
- Is dispute resolution impartial? Is arbitration available?

B. Role of rules, regulations and administrative orders

Many mining codes are supplemented with mining regulations, rules, administrative orders, administrative guidelines and other regulatory devices. Depending on the legal system, such regulations, rules and administrative orders may derive directly from a power granted in the mining law to a specific government officer, or may derive from the general principles of administrative law. Typically, the Minister for Mines, or his legal equivalent, is granted the authority to issue regulations/rules/orders (hereafter referred to simply as regulations).

The fact that such regulations are not passed as laws by the law-making body, implies that there is a great deal more flexibility in when and how they come into being and how and when they are modified. This latter point is important with regard to the subject matter contained in the mining law. To replace or amend a mining law is a politicized, complicated and time-consuming process. Typically, an amendment to a mining law will take at least one year; more commonly it will take many years. Regulations, on the other hand, can often be changed very quickly and with limited political input. Thus, lawmakers are wise to consider which subject matter should be in the mining law and which topics are better placed in regulations. Many mining laws are very short and lay out only the fundamental framework of the mineral-sector regulatory system. The details are provided in the regulations. Less flexible systems are found in longer mining codes where fewer details are left to the discretion of the officer who has been granted rule-making authority.

There is no universal best balance. For instance, in nations where corruption is a problem, it may be beneficial to specify many matters within the mining code to avoid abuse of rule-making authority. Even within a single country, the best balance may vary from district to district. In Canada, some provincial mining codes are very short and are supplemented with relatively long regulations, while other provinces have adopted longer mining codes with fewer subjects left to the discretion of an administrative office. Like in Canada, each State and territory in Australia has its own mining code and set of regulations, and the balance between the law and the regulations varies considerably. The Indonesian mining law is very short, and rules and contracts are used to provide administrative detail. As a general observation, important policy matters are addressed in the mining code while administrative details are embodied in regulations.

Since laws are more difficult to change than are regulations, the subject matters addressed in the law are usually considered as more stable than those found in the regulations. There are some mineral sector regulatory topics where enhanced stability is perceived by most governments as useful. For instance, the various types of rights that can be granted (exploration license, mining lease, quarrying permit) and the person or group that is empowered to grant them is usually designated in the mining code. Procedures for the granting, issuing and recording of the grant are often not considered central to the law and are more typically found in regulations. The holders

of mineral tenements granted under a mining law are also interested in stability with regard to certain issues. Chief among these are the holder's rights and obligations under the tenement, the ways in which the tenement can be lost through government action, and security of tenure as it relates to the transition from an exploration right to a right to mine.

The subject matter in most regulations does not discriminate between holders of like sorts of tenements. For example, all holders of a mining lease will be subject to the same reporting requirements. However, regulators perceive the need to implement actions that are specific to a single operation. This can be accomplished through a variety of means ranging from the imposition of contractual obligations (see section on mineral agreements) to more transparent options. One of the common means to affect requirements on a single operation is through a mining code granted power given to some specified government officer to specify "terms and conditions" in the tenement document that are not specified in the mining code. For example, the mining code might state in its mining lease obligations section that "the tenement holder has the obligation to: undertake the approved work program, carry out all work in a safe manner, submit annual reports,...., and fulfil all other conditions stated in the license". Another part of the code would grant a government officer the power to attach such "other" conditions to the license. Thus, at the time the license is granted, the holder will know the full range of special conditions that will be attached to that specific project.

From time to time, the government may need to intervene in some aspect of a project that is not directly addressed in the mining code, regulations or special conditions. To provide for situations where unique occurrences at a project may require government intervention, many mining codes empower an officer, or office, to issue some form of "administrative order" that the tenement holder is obliged, under the mining law, to comply with. For example, it may be thought that a new hydraulic mining method being introduced in a part of a mine is inherently unsafe and is endangering workers. If the mining code states that the Director of Mines can issue orders to protect the health and safety of workers, the Director could issue a "cease and desist" order to stop the unsafe practice. This type of discretionary power is very useful and is a key part of many mining codes. However, most mining codes do not grant unlimited discretionary power to the empowered officer. When a government officer is empowered to exercise discretionary authority, most laws take care to ensure that such discretion is not abused. The matters that may be subject to administrative orders are carefully defined in most mining codes, and, in many instances, the tenement holder is granted some type of appeals process.

C. Ad hoc and model mineral development agreements

1. Forms of agreement

Mining agreements are not the usual way governments regulate mines. Even in nations where governments utilize mineral agreements, their use is usually restricted to very large projects. For instance in Argentina, Botswana, Chile, the Philippines, Papua New Guinea and Indonesia, governments use agreements to help regulate large mines but handle smaller operations under specific provisions in the general mining code. In many instances, even when an agreement is in place, some, or all, of the mining code may still apply to the operation.

Mining projects may be the subject of many types of agreement. At the upper tier is the agreement, or agreements, between the mine and the government (the term mine is used here in the context of the entity that holds the legal right to mine). A second tier of agreements may define the nature of the mine vis-à-vis the owners or controlling interests, i.e., such as a joint venture or shareholder's agreement. On the third tier will be agreements between the mine and its financiers, suppliers, contractors, labour and so forth. Additionally, there is trend in some jurisdictions for mines to enter into agreements with local communities, landowners, land-users or indigenous peoples.⁸ This section focuses primarily on first tier agreements - agreements between government and the holder of the mining right.

This study is not intended as a treatise on the differences between "common" and "civil" law. However, a brief diversion into comparative law is useful in understanding some of the approaches governments have taken in bringing agreements into force. In both common law and civil law jurisdictions, parties to an agreement can freely fix the number and extent of their obligations. However, if the agreement conflicts with the mining code or other laws, the resolution of the problem is dependent on the type of legal system.

In many pure or modified civil law jurisdictions (such as Chile, France, Indonesia and francophone Africa) the portions of the agreement that are in conflict with the general mining code can supersede the code as long as they do not violate public order. The extent to which "public order" acts as restraint varies among civil law jurisdictions but generally, if the government enters into an agreement which is some way contradicts the mining code, the agreement will prevail.⁹

This is not the case in most common law jurisdictions; if there is a conflict between a government-signed agreement and the general mining code, the code will prevail. It is for this reason that in most common law countries, once an agreement is signed, if there is any conflict with the mining code or any other law, the agreement is then passed as a specific law by the law-making body. As a law, the agreement can supersede the general mining code.

The ability of a negotiated agreement to supersede other laws can be important for large mining projects. To put together a large project will require close cooperation between the company, government, lenders, contractors, suppliers, workers and local communities. Often times, laws written with another scale of operation in mind will be inappropriate or inadequate for regulating the operation. For example, the labour law may require that expatriate workers renew their work permits every two months. In the two-year long construction of a major mine requiring hundreds of expatriate specialists, it may be more efficient for all the parties to agree that for that time period, the requirement will be waived. Another typical case involves the use of offshore accounts used to receive sales revenues for payment of obligations to lenders, suppliers and contractors. On one hand, the government may have good reasons for generally requiring the repatriation of all sales revenues back into the country, but where such a requirement would make

8 For example, in Papua New Guinea land rights are a major concern. Most mines enter into a negotiated agreement with landowners.

9 However, it should be emphasized that under the civil law concept of administrative contract, the government may act to unilaterally modify the contract to protect the public interest.

it impossible for a mine to gain financing, long-term sales commitments and so forth, it is useful to allow a negotiated exception to the general rule.

Ad hoc and model agreements are used in some nations as a means of regulating certain types of mining-sector investment and development. The subject matter covered in an agreement can be broad or narrow, and can address all phases of a mineral development or a single phase such as exploration, mine development, mining or reclamation. Agreements covering exploration through mining are sometimes referred to as "cradle to grave" agreements. During any given phase, specialized agreements may be in force (turnkey agreements for construction, service contracts, management contracts, marketing contracts, etc.).

The terms "ad hoc agreement" and "model agreement" are used purposefully here to separate two fundamentally different approaches to mine regulation. The term ad hoc agreement is used to signify an agreement which is unique, and which has been negotiated specifically for a single mine. Its terms will have been determined based on the site-specific characteristics of the deposit. In contrast, a model agreement is a more generic agreement intended to be used to cover the regulation of a number of mines in a like or very similar manner. An example of the first type is the ad hoc agreement governing the Ok Tedi Mine in Papua New Guinea. It was specially negotiated to address the development of this one mine and includes unique provisions not found in any other Papua New Guinea mining agreement (Pintz, 1984). The contract of work (COW) system in Indonesia is perhaps the best known model agreement approach. The Government has set out, for progressive generations of mines, a common agreement that is applied to all mines within that generation. A third and related hybrid type of agreement might be termed a "proforma" agreement. This is an agreement which begins as a predefined model agreement and is then modified through negotiations to take on attributes unique to an individual mine or operation, i.e., an ad hoc agreement. The Philippines utilizes this approach with its model production-sharing agreement (MPSA). Most terms are set out in the proforma with the understanding that certain terms and conditions are open to negotiation.

2. Negotiation of agreements

There have been many books written about the negotiation of mining agreements. In particular, five are recommended to gain a wider understanding of the negotiation process than is provided in this short summary section. The first recommended book, a collaborative effort by two professors at Harvard University (Smith and Wells, 1975), delves into the backgrounds and interests of the negotiating parties and examines many topics and issues in detail. It is generally regarded as the one of the most comprehensive treatments available. Although published in the mid-1970s, many of the issues, approaches and solutions described therein remain topical. The second book was published by the United Nations (UNESCAP, 1992) and draws upon the negotiations experience of a wide variety of authors, i.e., lawyers, economists and geologists. It is particularly valuable in understanding the negotiation process and negotiation strategies, and contains a good description of project economic analysis from a government perspective. A volume by the former Papua New Guinea mining policy advisor (Pintz, 1984) traces the negotiations that led to the construction of one of the world's largest copper mines. The volume is highly illustrative and provides an insider's insight into complex negotiation issues common to most large-scale mines. A recent volume by a Canadian solicitor (Harries, 1994) looks at issues commonly negotiated in agreements between private parties. The most comprehensive recent

book on mining agreements between the government and a private party traces the evolution of mining agreements over the past several decades and delves into many technical matters not addressed in the other cited volumes (Barberis, 1996). Much of the material in this section has been derived from these five seminal works on mining agreement negotiations.

The structure utilized below to introduce the key elements of negotiating mineral agreements has been adopted from an outline by Charles Johnson. Based on his extensive experience in negotiating diamond and other types of mineral agreements, Johnson has broken the key elements of a minerals negotiation, from a government negotiator's perspective, down into a progression of 11 activities. Although these activities would not apply to every type of mining negotiation, they do provide a useful, common-sense basis for understanding a government negotiator's approach to a typical agreement negotiation. The 11 activities include the following:

- understanding your side's interests;
- understanding the other side's interests;
- understanding both sides' alternatives;
- defining where interests are the same and different;
- defining the parties on each side;
- using standards and principles in negotiations;
- who should be on the negotiating team;
- preparation;
- the negotiation strategy;
- the process of negotiation;
- agreement implementation.

a) Understanding the government's interests

Although government interests may appear to be obvious, many negotiations fail or are impeded because government negotiators have not resolved three types of internal questions. These relate to representation, defining objectives and policy framework.

It is important for a government negotiating team to know whom it is representing. Possibilities include the central government, provincial government, local government, local peoples, land-owners, land-users, a State corporation or any one of a number of ministries. Often, some or all of these parties will have objectives relating to the outcome of the negotiations. In some instances, these objectives may be similar or complement one another but some will conflict. For instance, with regard to taxation, local, provincial and central governments will each desire their "fair" share. The Ministries of Mining, Planning, Industry and Trade may favour quick, intensive project development, while the Ministry of Environment may favour no or limited development. Without first identifying who is being represented, it can be difficult to focus on the specific objectives of the negotiation.

Early establishment of who is being represented will aid in next defining the government's interests and objectives in the negotiation. Such interests can vary widely but commonly fall into one or more of the following categories:

- fiscal;
- management;
- equity;
- environment;
- mine size;
- timing;
- level of processing;
- length of agreement;
- land use;
- labour;
- local community impact.

It is important for the government negotiating team to enter the negotiations process with a firm understanding of the objectives it hopes to achieve and how they rank in order of priority and flexibility.

Finally, the negotiating team should have a firm grasp of the broader policy interest issues. For instance, is this the right type of investment? What will the impact of the project have on economic and social development and on the environment? Does the government have the administrative capability to manage all aspects of the project that come within its regulatory remit?

Government-negotiating teams that give thorough thought to these three pre-negotiations issues - representation, objectives, policy framework - will be in a better position to implement efficient and effective negotiations.

b) Understanding the other side's interests

The primary goal of any negotiating process is to arrive at a mutually acceptable resolution of each party's primary objectives. In order to do this, the government negotiating team will benefit from an effort to understand the other side and its interests. Before negotiations commence, the team should research the other side to determine its profile and motivations. To establish a company profile requires answering questions such as:

- Is the company small, medium or large by world standards?
- Is the company financially well off?
- Does the company undertake regional or global marketing?
- What do other governments think about the company?
- What is the company's past track record?
- Is the company a single entity or are there a number of competing interests within it?
- Does the company have experience working in a similar country?
- What was the company's negotiating strategy in other countries?
- What are the backgrounds of the company's negotiators?

Like the government, the company will have a number of objectives that it hopes to achieve through implementation of the project. Some of these will become apparent to the

government negotiating team only as negotiations progress, others can be anticipated. It may be useful to place specific company objectives within the company's broader motivational interests. For example, which of the following motivational elements are driving the company's current investment plans: profits, diversification, increased market share, integration back to mining stage, pre-empt competition, security of raw material supply and international tax position.

c) Understanding both sides' development alternatives

The government negotiating team should attempt to understand the range of development alternatives available to it and the company. By understanding these alternatives the team is in a better position to determine the importance of concluding the negotiations with this particular company.

Government's alternatives

There are a number of key questions that assist in better understanding the government's development alternatives. Some of these can provide guidance to formulating various negotiating strategies and tactics.

What would be the impact if the negotiations are not successful and the project is not built? In other words, is the development of the project a high development priority? The nation is currently functioning without the mine. To what extent will the mine benefit or harm the nation economically, socially and environmentally?

What are the implications of delaying the project?¹⁰ Negotiations can proceed quickly or can be drawn out. Usually it is in both parties' interests to proceed efficiently, but one or the other party may use time as a negotiating tool.

Is this the right time to conclude an agreement? Commodity markets are cyclical and subject to wide variations in prices. Although negotiated mining projects are usually long-term operations and will experience wide fluctuations in revenues over time, prices at the time of negotiation may bias the negotiations. If the commodity is at the bottom of the price cycle, the government's bargaining position may appear weaker than when prices are at a peak. Are market conditions likely to improve or worsen and alter the government's bargaining position?

How much does the government need this investor? If the country is experiencing an exploration and mining boom, there may be alternative investors. This investor may have certain attributes that make it particularly well or badly suited for the anticipated project. If the country has not established a track record of successful negotiations with other

¹⁰ In the mid-1980s the Government of the Philippines entered into negotiations with Freeport MacMoran. The negotiations proceeded slowly, and during the interim, the company discovered a lower-cost deposit in another country and abandoned the negotiations.

companies, failure to reach an accord with this company could send the wrong message to other potential investors.

Does the company have any sort of legal right to the minerals that would preclude development by another company? This question is particularly relevant in the case where the company has discovered a deposit while operating under a valid grant of an exploration license. If the license includes strong security of tenure provisions, the country may be bound by law to deal exclusively with the holder of the exploration license.

Company's alternatives

The company's alternatives can play a crucial role in negotiations. By understanding the company's range of development alternatives, the government negotiating team is better informed about the importance of the project to the company. For instance, does the company have competing investment opportunities in other countries? If the company is a large one, it may have a wide selection of widely dispersed projects to choose from. On the other hand, this particular project may have inherent qualities that make it an important part of the strategic corporate plan.

Determining the importance of the project to the company is not always a straightforward task. The negotiating team will need to look for evidence of the company's level of interest and investigate the company's other projects. The importance of the project may also become apparent during the negotiation process but there is a danger that the enthusiasm of the company's negotiating team to conclude a deal may mask the actual importance of the project to the company.

d) Defining where interests are the same and different

The negotiating team will find that on many issues, their interests are similar to those of the company. Early identification of these types of issue will speed negotiations as well as establish, from the start, a spirit of cooperation between the parties. It will also aid in identifying the issues where there is a divergence of opinion. Examples of issues that both parties can quickly move forward on include: developing and operating the project efficiently; developing and maintaining an efficient, cost-effective workforce; maintaining safe working conditions; and the need to maintain good relations between the government and the company.

While there will be substantial mutual agreement on many issues right from the start of negotiations, many issues will need to be negotiated. Failure to resolve any issue that is critical to one of the parties may result in a failed negotiation. Early identification of the company's critical issues is essential to promote efficient resolution. In some instances, critical issues will raise constitutional or other legal questions, and the government team will need to obtain legal opinion. In many countries, obtaining legal opinion from the branch of government responsible for providing it can be a slow process. Such agencies of government tend, by their nature, to be cautious and conservative and external pressure may be required to prod them into rendering their opinion. Through identification of what is legally possible or not possible, each party can better understand its options.

The number of issues that will require negotiated resolution may be many or few. Larger projects usually generate more issues than smaller projects. Topics that are commonly negotiated include: division of profits, level and type of taxes, land access and/or ownership, environmental protection, arbitration, exchange rate, offshore accounts and rate of localization. As governments have moved away from direct participation in mining, preferring instead to take a risk-free "share" through direct taxation, issues such as level of government equity and control have become less prominent. Likewise, most governments no longer negotiate downstream processing requirements, leaving that decision to the company.

e) Who should be on the negotiating team?

The ideal government negotiating team will depend on the nature of the project. A team will usually have from five to ten members. Teams larger than this are rarely effective, and will spend too much time trying to resolve internal differences. The team leader should hold a high-level government position, have demonstrable leadership qualities, be bright and be experienced in negotiations. Prior experience in minerals is useful but not necessary. Other team members should include: a person experienced in the minerals industry; a lawyer with knowledge of the country's laws, mineral agreements and administrative practices; technical experts; representatives from a few key ministries; and a strong financial expert. Support personnel for the team should include a computer expert, preferably trained in mineral economics, capable of modeling the fiscal elements being negotiated, and representatives from government sectors or ministries that have selective inputs. In the case of a protracted negotiation, access to a psychologist with negotiating experience may prove useful. In most instances, the head of State and ministers should not be part of the negotiating team. If negotiations are faltering because of internal dissent, or if a particular member of the team proves inadequate, the team should be reconstituted as quickly as possible.

f) Defining the parties on each side

The negotiating team should strive to acquaint itself both with its own members as well as with the other party's. A planned profiling effort might include: nationality, education, experience, personality, position in team, position when outside of team, previous positions, degree of flexibility, and hobbies and interests. It is also important to understand who each team member, on both sides, represents.

Getting to know each other will aid most negotiations. Informal outings, lunches, site visits and so forth can assist to break down barriers and establish better rapport. A formal internal policy on alcohol consumption at such events should be established.

g) Using standards and principles in negotiations

Once the government team has determined its objectives it should set the principles and standards. For example, with regard to taxation, how should various tax options be compared? There are many ways to compare tax options. A common way is to calculate the government's net present value of tax revenues and the company's internal rate of return. Gaining an appreciation of the rates of return commonly required by mining companies is essential, and knowing the company's is a great advantage.

The mining industry is a global industry and obtaining information about the terms and conditions in other nations' mineral agreements may assist the team in establishing benchmarks. The use of an external consultant can provide easy access to many agreements, and the team should not hesitate to ask the company for copies of its previous recent agreements elsewhere. When the company will not provide them, external sourcing should be seriously considered. Such agreements should, however, be referred to with caution. Every project is unique and every country poses unique risks for the company. What constitutes a "fair and equitable" deal in one country may not do so in another. Many issues addressed in the negotiations have probably been incorporated in other mineral agreements. Having access to a range of options pre-tested elsewhere can provide one way to speed negotiations.

Careful thought should be given to what subject matters are to be specifically covered in the agreement. Many matters will be covered by a general law of application. Unless there is a compelling reason, it is usually better to rely on the general law rather than introducing an exception.

In some instances, reference to some sort of international standard may be useful. For example, water effluent standards recommended by the World Health Organization might be incorporated by reference. Similarly, rules of arbitration, pricing mechanisms based on the London Metals Exchange and so forth can provide a simple way to proceed efficiently.

h) Preparation

Inadequate preparation can lead to protracted negotiations and less favourable results. In the preceding sections, a number of preparatory actions have already been identified, and there are several additional items that should be part of the negotiation process.

If fiscal or equity terms are to be part of the negotiations, it is essential that a computer financial-analysis model be constructed and used. The company will have such a model at its disposal, and the government may opt to use it, use it with modifications or build its own. The cost of building such a model is relatively small, and, in most cases, it is preferable to work with one's own model.

The type of information used to construct the model will depend on the type of agreement being negotiated. Obviously, a marketing agreement will entail very different parameters from a mining agreement. Likewise, a "cradle to grave agreement" covering both the exploration and mining phases of a project will be different from an agreement covering the mining phase of an already delineated deposit. In the first case, the agreement would focus on probable types of deposit with an emphasis on grade and tonnage variations. In the latter case, the model would be based on parameters defined in the feasibility or pre-feasibility study.

Preparation entails both work before negotiations commence as well as continued efforts throughout the negotiation process. It is important to meet before and after every negotiation session. In the pre-session meeting, the team should review all issues to be discussed, agree on all points, and decide who will present them. Only members of the team who have been involved with the continued negotiations should present views; others should remain in the background in a

strictly supporting role. After each session, the team should meet to discuss and agree on what transpired. A team member should be assigned the permanent job of keeping an accurate written record. Records should be kept of encounters including the pre-session meeting, the meeting itself and the post-session meeting. These records will prove particularly valuable in lengthy negotiations. Pre- and post-session meetings take time and should be made part of the team's schedule.

i) The negotiation strategy

There are many possible negotiation strategies. In this section actual strategies will not be discussed but rather a number of activities will be described that help shape strategy selection and implementation.

The final agreement will take the form of a written document, and that document will be the evolutionary product of previous drafts. An important part of this process is deciding who will submit the original draft. This is a decision that can be taken by the government negotiating team. If the government submits the first draft, the team must decide whether to initially propose the final terms it hopes to achieve on key topics or to take more extreme positions.

The discussions based on the initial and subsequent drafts will allow an evaluation of the interests and goals of both parties, and an estimate of terms in the final agreement. Before bargaining commences, it is useful to first explore the initial draft with the other party to identify topics where there is common sentiment and topics where there is significant disagreement. Topics that are apparently of high priority to the other party should be noted.

Once the exploratory sessions are completed, thought should be given to the opening offers. Should the company or government extend the first offer to modify the draft? Which items should be discussed first? There is no correct procedure and each negotiation may require a different approach. Generally though, it is customary for whichever party did not prepare the original draft to make the initial bargaining offer. In the first few sessions, it is usually beneficial to settle at least some points where there is substantial agreement in order to indicate the willingness and ability of the parties to agree.

A series of offers and counter-offers will then commence. The government team should use its pre-session meetings to explore each of its offers so that all team members understand their justification. Likely counter-offers by the company should be identified and discussed.

The government has a strong position for without an agreement the company cannot go forward with the project. The government is therefore in a position to identify terms which are not negotiable; the company either agrees to them or it can go elsewhere to conduct its business. Two categories of non-negotiable topics can be identified: those that are set by any law that will take precedence over the agreement; and topics that are dictated by policy. The number of non-negotiable topics should be kept to the minimum possible.

Just as the government may find some topics not open to negotiation, the company may also have irreversible positions on issues it considers mandatory for its project to proceed. Over time, the sessions will indicate where the company is flexible and where it is not.

Negotiating limits should be set for each issue requiring bargaining. Obviously, these limits should be kept secret from the other party. Care should be taken in negotiating sessions to not exceed these limits in the "heat of the moment"; where a limit must be exceeded, this should be discussed and agreed by the team in advance. The team should be creative and flexible in finding options, within the limits, that meet the interests of both sides.

When making an offer or counter-offer, the team should also decide in advance which member of the team should do it. In some instances, it may be useful to have all offers originate with a single spokesman; in other instances, various members of the team may be used as an advocate for different issues. All offers should be discussed in advance to gain the full insight and views of the team. Such pre-agreement can avoid the need to change positions later on.

During sessions, it is important to keep the lead negotiator informed and advised. This can be done through notes or during breaks. Discussions between members of the team should be kept to a minimum during actual sessions, except with regard to the clarification of factual information.

In the making and rejecting of offers, it is usually beneficial to attack agreement terms rather than individuals. The aim of the process is to reach agreement, and an approach that nurtures the concept of "negotiating partners" instead of "negotiating foes" is generally more practical and efficient. A hostile presence on the company's team, who has a personal grudge to settle, can seriously slow or halt effective negotiations. If a member of the company's team is to be "attacked", this should be done as part of a planned strategy, not simply a result of frustration on an issue or because of a personality difference.

In most cases, the negotiating team will not have the authority to actually bring the agreement into full force and effect. It is important to keep the authorizing party informed and to consult with it on important issues so that the negotiated agreement will, in the end, be acceptable to the authority.

IV. POLICY, REGULATION AND INVESTMENT

There is a close relationship between mining policy, regulation and investment. The previous sections have shown how governments can codify and implement policy through laws, regulations, administrative practices and agreements. The relationship between regulation and investment will now be developed.

Mining companies have many options to choose from when deciding where to invest. Whether the target commodity be sand or diamonds, there is prospective ground available somewhere on the planet. Companies balance many factors when deciding where to invest. Geological potential is usually a high priority but even excellent geology may not be enough to attract investment if the policy and regulatory framework are thought to be inappropriate or unworkable.

In a survey of 39 transnational mining companies conducted for the United Nations (Otto, 1992a and b) a ranking was made of 60 investment criteria used by transnational mining companies when deciding where to invest. Of the top ranked 20 criteria, all but 10 per cent were related in some way to government policies and regulatory systems (see following table). Thus, governments have a great deal of control over their mineral sector investment environment.

Table
Ranking of investment decision factors at the exploration and mining investment stage

Ranking		Decision criteria based on:
Exploration stage	Mining stage	
1	na ^a	Geological potential for target mineral
na ^a	3	Measure of profitability
2	1	Security of tenure
3	2	Ability to repatriate profits
4	9	Consistency and constancy of mineral policies
5	7	Company has management control
6	11	Mineral ownership
7	6	Realistic foreign-exchange regulations
8	4	Stability of exploration/mining terms
9	5	Ability to predetermine tax liability
10	8	Ability to predetermine environmental obligations
11	10	Stability of fiscal regime
12	12	Ability to raise external financing
13	16	Long-term national stability
14	17	Established mineral titles system
15	na ^a	Ability to apply geological assessment techniques
16	13	Method and level of tax levies
17	15	Import-export policies
18	18	Majority equity ownership held by company
19	21	Right to transfer ownership
20	20	Internal (armed) conflicts
21	14	Permitted external accounts
22	19	Modern mineral legislation

Source: Derived from a survey of 39 transnational mining companies. J. Otto, "A Global Survey of Mineral Company Investment Preferences," Mineral Investment Conditions in Selected Countries of the Asia-Pacific Region, United Nations ST/ESCAP/1197, 1992, pp. 330-342.

a na - not applicable.

The first section of this paper indicated that a shift is taking place in mining policies: increasing levels of regulation are being imposed on the major mineral-producing developed nations, and increasingly attractive policies are being introduced in developed nations. These policy changes may account for a dramatic change in worldwide exploration expenditures.

The Metal Economics Group, a private consultancy, has estimated that in 1991 roughly 70 per cent of free-world exploration investment was expended in Australia, Canada and the United States of America. By 1996, their estimate placed the investment percentage in these three countries at only 42 per cent of the free-world total. On a percentage basis, the largest shift was due to increased exploration efforts in Latin America which in 1996 attracted about 28 per cent of the world total.

Until recently, most South American nations restricted the percentage of equity in a mining company that could be held by a foreign entity. A relaxation of this requirement coupled with other more accommodating policy, fiscal and regulatory systems has resulted in mining-sector investment booms in countries such as Chile, Mexico, Argentina and Brazil.

While the percentage of worldwide exploration expenditure has shifted, the actual amounts spent in the traditional metal-producing developed countries did not decline significantly during the first half of the 1990s. Thus, the actual amount of money being spent worldwide on minerals exploration has increased substantially from 1990 to 1996. This may change in the future. The 1997 drop in the gold price, the Bre-X scandal in Indonesia, the sell-off of gold by central banks and a perceived oversupply of some base metals may lead to a lowering of overall mining-sector investment. Those nations with good geology and attractive policies and regulatory systems are best positioned to withstand any such downturn.

The 1990s saw several unique investment developments that may not be repeated. First in importance is the transition in national policies towards opening formerly closed countries to mineral investment but several other key factors have also played a role. Extraterritorial restrictions that limited the ability of the South African mining houses to invest abroad were loosened. This, coupled with increased costs and lowered ore grades at home, encouraged most major mining houses (Anglo American, De Beers, Goldfields, Gencor, Anglovaal) to increase their overseas activities. At the same time, Canadian stock markets began listing numerous "junior" exploration companies that aggressively sought out opportunities both home and abroad. It was also during this period, and continuing today, that some barriers to competition in the minerals-consuming nations were lowered. For example, coal-mining subsidies in Japan, the United Kingdom and Germany were eliminated, or lowered, offering new opportunities for increased globalization of the coal industry. Tariff barriers both on imports and exports have fallen dramatically and may continue to do so under WTO (World Trade Organization) negotiations, investment insurance schemes are more operative (such as the Multilateral Investment Guarantee Agency) and there has been a growth in the number of multi- and bilateral tax treaties. Overall demand for many minerals has steadily increased reflecting, in part, growing consumer purchasing power in many developing nations, particularly in Asia. Thus, through a combination of events, the groundwork was laid for a new era in the minerals industry.¹¹ Substantial new areas have

11 For a more complete analysis refer to Waelde, 1989.

become available to mining companies including vast tracts in the former Soviet Union, China, India, Eastern Europe, the African Copper Belt, the Andean Pact nations, etc. (Otto, 1998)

Investment and government mining policy are closely linked. Even the most highly geologically prospective nations will have difficulty in attracting foreign investment without adequate national policy, regulatory and fiscal systems. Over the past few years, the level of mineral-sector investment has increased in real terms, and those nations that have put into place regulatory systems which reduce or allow a company to manage risks at an acceptable level have, for the most part, enjoyed increased levels of investor interest.

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