



Economic Commission for Africa

## MANAGING MINERAL WEALTH

Training Materials on “Management of Mineral Wealth and the Role of Mineral Wealth in Socio-economic Development”



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**Regional Cooperation and Integration Division (RCID)**

**UNECA**

**Addis Ababa, Ethiopia**

**2002**

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First Printing: September 2004

Printed by the ECA Documents Reproduction and Distribution Unit (DRDU)

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## LIST OF ACRONYMS

BPD	Business Partners for Development
CASM	The Communities and Small-Scale Mining
CIDA	Canadian International Development Agency
CIT	Company Income Tax
CSD	Commission on Sustainable Development
DEMR	Department for Energy and Mineral Resources
DFID	Department for International Development
DRC	Democratic Republic of the Congo
ECA	Economic Commission for Africa
ECOSOC	Economic and Social Council
EIA	Environmental Impact Assessment
EIR	Extractive Industries Review
EPA	Environmental Protection Agency
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross domestic product
GMI	The Global Mining Initiative
HIPC	Highly-Indebted Poor Countries
IBRD	International Bank for Reconstruction and Development
ICC	The International Chamber of Commerce
ICCPR	International Covenant on Civil and Political Rights
ICESCR	The International Covenant on Economic, Social and Cultural Rights
ICJ	International Court of Justice,
ICME	International Council on Metals and the Environment
ICMM	International Council on Mining and Metals

ICSID	The International Centre for the Settlement of Investment Disputes
IDA	International Development Association
IIED	International Institute for Environment and Development
ILO	International Labour Organization
IMF	International Monetary Fund
ISO	International Organization for Standardization
ISA	The International Seabed Authority
IUCN	International Union for the Conservation of Nature
MEPC	Marine Environment Protection Committee
MMSD	Minerals, Mining and Sustainable Development
NGOs	Non-government organizations
NRF	Natural resources fund
OECD	Organization for Economic Cooperation and Development
OT	Opportunities and Threats
PCA	The Permanent Court of Arbitration
PoI	Plan of Implementation
RCID	Regional Cooperation and Integration Division
SAP	Structural Adjustment Programme
STEEP	Social, Technical, Economic and Environmental Project
SW	Strengths and Weaknesses
SWOT	Strengths, Weaknesses, Opportunities and Threats
UNCED	United Nations Conference on Environment and Development
UNCHE	Stockholm Conference on the Human Environment
UNCITRAL	United Nations Commission on International Trade Law
UNCLOS	UN Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environmental Programme
UNGA	United Nations General Assembly
UNHRC	The United Nations Human Rights Committee

VAT	Value Added Tax
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

## ACKNOWLEDGEMENTS

The Training Materials on “The Role and Management of Mineral Wealth in Socio-economic Development” (The modules) were developed as part of a joint project between the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Economic Commission for Africa (ECA) to implement the African component of project M (of the United Nations Development Account) on “Capacity building and policy networking for sustainable resource-based development”. Initial discussions on potential areas of collaboration between ECA and UNCTAD were held in June 2001 between the Deputy Executive Secretary of ECA, Mme Lalla Ben Barka and Ms Beatrice Labonne, Senior Advisor, UN-DESA, Geneva office. Mr. Samba Jack, Director, Office of Policy and Resources Management (OPRM), ECA and Mr. John Burley, Head, Resources Management Services (RMS), UNCTAD signed in March 2002 a memorandum of understanding between ECA and UNCTAD spelling out the duties and responsibilities of each party in implementing the project. Ms Jo E. Butler, former Secretary to the Commission, ECA helped finalise the memorandum.

Messrs Yousif A. Suliman, Director, Regional Cooperation and Integration Division (RCID) of ECA and Abdelaziz Megzari, Officer-in-Charge, Division on International Trade in Goods and Services and Commodities (DITC) of UNCTAD respectively provided the overall supervision of the project. Antonio Pedro, leader of the Mineral and Energy Team of RCID and Brian Chambers, Programme Manager, Special Programme for Resource-Based Development of DITC led the implementation of the project and conceptualized the modules. Mr. Olle Östensson, Chief, Diversification and Natural Resources Section, Commodities Branch of DITC replaced Mr. Brian Chambers on his retirement in July 2003.

Professor Roderick Eggert of the Colorado School of Mines, Denver, USA wrote Module 1 on “The Mineral Economies: Performance, Potential Problems and Policy Challenges”. Mr Fui Tsikata, of the University of Ghana, Faculty of Law, Legon, Ghana wrote Module 2 on “International Law, National Sovereignty and Access Rights in Relation to Mineral Resources”. Mr Philip Daniel of Transborder International, UK, wrote Module 3 on “Mineral Rent and Revenue Management”. Mr Christopher David Rogers of the University of Dundee, Centre

for Energy, Petroleum and Mineral Law and Policy, UK wrote Module 4 on “Diversification, the Creation of Social Capital and the Promotion of Sustainable Livelihoods. Mr Hudson Mtegha, from the Minerals and Energy Policy Centre (MEPC), South Africa wrote Module 5 on “The Process of Mineral Policy Design and Implementation in Africa”.

A joint ECA, UN-DESA and UNCTAD Seminar on “Management of Mineral Wealth and the Role of Mineral Wealth in Socio-economic Development was organized from 13 to 15 August 2002 in Lusaka, Zambia to review, validate and test the modules. The seminar was attended by 34 participants (List attached as Annex 1) from 13 African countries representing senior officials in ministries of mines and finance. Their contribution to the improvement of the quality of the modules has been appreciated. The modules will be used for a training programme on management of mineral wealth to be initiated in 2005 by the Sustainable Development Division of ECA.

The modules and the Lusaka seminar could have not been done without the funding of DfID, ECA and UNCTAD. The efforts of Messrs Peter Smith, Environmental Engineering and Geosciences Adviser of DfID, Halidou Ouedraogo, chief, SRDC Coordinating Unit of ECA, Anthony Nwanze, Chief TFPMS of ECA, and George Alibaruho, Senior Adviser, ECA in arranging the funding are acknowledged.

Of equal importance was the role played by Elleni Negash of TRID and the ECA office for Southern Africa led by Mr Robert Okello in organizing and servicing the seminar.

Thanks to the ECA Communication Team for their inputs and processing of the publication.

## INTRODUCTION

Nations richly endowed with minerals should be able to develop these resources for their own benefit, creating opportunities for employment and regional economic development, ultimately facilitating broader national economic and social development. Yet many national economies highly dependent on mineral production and exports have not performed well over the last several decades. A key to converting minerals in the ground to broader economic and social development is good governance.

It is in this light that the United Nations Conference on Trade and Development (UNCTAD) and the Economic Commission for Africa (ECA) have undertaken a programme of activities aimed at improving the management of mineral wealth in Africa. The aims of the programme are two-fold. The first is to raise awareness among policy makers and practitioners and the second is to provide support for policy design and implementation through training.

This set of five training modules, summarized below, represents one element of the broader UNCTAD and ECA programme. The primary focus is on governance at the national level with special attention to economic and legal issues, as well as the process of policy formulation. Issues not covered here in any depth include environmental and social policy, and the concerns of local communities.

Module 1 provides a broad overview of the mineral economies, organized around five themes and associated sections. The first section creates a profile of those national economies dependent on mineral production and exports. The module identifies 37 developing nations for which mining represented 10 per cent or more of exports during the 1990s. These nations elude simple generalization; they are diverse in their location, level and growth of per capita income, and level and growth in broader social indicators. The second section summarizes the case for mining in developing countries in that it offers the potential for citizens to enjoy higher levels of income and consumption than otherwise would be possible. This second section also advocates that over the long term, broader economic development should be promoted through appropriate investment of a portion of mining revenues in education, health care, physical infrastructure and other forms of capital.

This potential is not always realized, and thus the third section identifies the potential problems of mineral dependence. These problems include: vulnerability

to external market forces largely outside the control of individual companies and nations, difficulties adjusting to structural economic changes that often accompany dramatic expansions in a sector such as mining, and political problems that sometimes accompany mineral dependence. The fourth section examines previous work that systematically evaluates the link between mineral dependence, on the one hand, and economic performance on the other. This review indicates that there is little to suggest that mineral economies intrinsically perform more poorly than others, even though some mineral economies have performed very poorly. The evidence suggests that mineral wealth can be managed so that the potential problems of mineral dependence are minimized or avoided. In its final section, the module argues that government policies and institutions are critical to realizing the potential of mineral resources.

Module 2 introduces readers to the legal dimensions of mineral development. A wide range of national and international law is relevant. One central message of this module is that a single mine often finds itself under the jurisdiction of a number of different legal systems--those of the nation hosting the mine, the home country (or countries) of foreign investors, and the nations consuming a particular mineral product. Another central message is that, increasingly, national sovereignty over mineral rights and development is being constrained by international law and associated norms and procedures. The module presents a number of international initiatives motivated by concerns that multinational companies sometimes take unfair advantage of weaknesses in the legal systems in many developing countries.

The first part of the module is international in nature and begins with a discussion of the relationship between international law and national sovereignty. It goes on to note that international law primarily affects mineral rights in the areas of investment protection, environmental protection, and respect for human rights. An important feature of international law is the number of international bodies and forums for dispute resolution. The latter half of the module is national, rather than international, in focus. It examines national laws regarding ownership, licensing, and regulatory issues. It notes that, in many cases, mining competes with other potential land uses. Important areas of current tension involve the relationship between mining and local communities, especially regarding compensation and resettlement of people and communities dislocated by mining, and the sharing of mining revenue with communities. The final section discusses national institutions for administration, adjudication, and enforcement.

Module 3 focuses on government management of mineral revenues. It is organized around five topics. The first topic is securing mineral rent for public use. The module defines the concept of rent and discusses how to develop a system to tax these rents that reconciles the sometimes conflicting objectives of creating sufficient incentives for companies to invest in mineral exploration and mine development while at the same time securing a fair share of mining revenues

for public use. Special topics include constraints on effective taxation (including the capacity of national institutions to design and implement a tax system), mechanisms to deal with abandonment and reclamation costs, and provisions of infrastructure at mining sites. The second topic is mineral revenues and fiscal policy—the uncertainty and instability of these revenues, the importance of broad macroeconomic stability in facilitating private investment, and fiscal rules for medium-term stability (limiting the growth of public sector demand, conservative price forecasting, a strategy for saving).

The third topic is permanent income, the idea that revenues from a depleting mineral resource can be made permanent by restraint on expenditure and appropriate investment in other forms of capital and financial assets. The fourth topic is natural resource funds that can be used to stabilize government expenditures in the face of unstable government revenues from mining, to save a portion of current income and invest it for future generations, or to create a precautionary balance of funds in nations in the early stages of mineral development, especially those with limited absorptive capacity for productive investment. The final section of this module covers selected topics related to distribution of mineral revenues. One important issue here is whether tax privileges or subsidies should be used to promote downstream processing of ore and concentrates. Another increasingly important issue is how to allocate government revenues from mining between national and regional levels of government.

Module 4 examines diversification and the creation of human and social capital, organized around four topics. The first is diversification itself. The quest for diversification is motivated by a pair of quite different factors, namely, the desire to reduce vulnerability to external market forces when a regional or national economy relies on one or a small number of economic sectors, and the observation that developed economies tend to be diversified rather than dominated by a single sector such as mining. Diversification comes in a number of forms including mining a wider array of minerals, using domestic mining as a basis for downstream processing and related manufacturing, and development of economic sectors unrelated to mining. Perhaps the major diversification issue for a government is whether to target and promote specific economic sectors for development or, on the other hand, to use revenues from mining to develop the physical infrastructure, human capital, and social capital facilitating the broader economic development that will result in, rather than be caused by, diversification.

The second topic of the module is physical infrastructure, human capital (the skills and talents embodied in a healthy and educated population) and social capital (the structures, institutions, and cultural mechanisms that define how individual people interact with one another). The third topic is sustainable livelihoods and poverty elimination. Here the module emphasizes the importance of education and training during the life of a mine so that the economic benefits created by mining are sustained after a mine closes. The final topic is how to deal with mine closure.

Module 5 discusses the process of developing and implementing mineral policy in Africa. The module begins by summarizing a number of factors influencing--and to some extent framing--policy development early in the new century: government initiatives worldwide since the 1980s aimed at improving the climate for foreign investment; privatization and market-oriented economic reforms; greater international concern for fundamental human rights; AIDS; corruption; and democratization. The module then proposes a process for formulating policy. The proposal is organized around four themes. The first is a statement of principles for policy design and implementation--that policy is a vision, aspiration, statement of intent, and course of action based on social values; that policy implementation can only be achieved with the right institutional structures and sufficient capacity of the stakeholders; and that policy development appropriately is multidisciplinary involving political, social, economic, and technological perspectives.

The second theme highlights the key ingredients of a good mineral policy, namely that mineral policy is consistent with and supports national goals and objectives; accounts for the interests of various stakeholders; is developed through consultative and participatory processes; supports the legal principles of the national constitution; operates within other national sectoral policies, takes into account the unique circumstances of the nation's development policy; and remains responsive to changes in the international business and policy environment. The third theme is a possible model for policy design developed around the principles and ingredients noted above. The final theme is institutional capacity and policy sustainability.

## **MODULE 1**

### **THE MINERAL ECONOMIES: PERFORMANCE, POTENTIAL PROBLEMS AND POLICY CHALLENGES**



## SUMMARY

Minerals in the ground represent potential wealth. On the one hand, mineral development offers the opportunity for workers and companies to earn income and, more broadly, for local communities and nations to develop economically. However, despite this potential, not all economies dependent on mineral production have performed well over the last several decades.

In this light, this module:

- Identifies the mineral economies and reviews their recent economic and social performance. It finds that the thirty-seven developing nations relied on mining for 10 per cent or more of their total exports during the 1990s. These mineral economies are diverse--in their location, level and growth of per capita income, and growth in broader social indicators.
- Summarizes the case for mining in developing countries. The potential benefits of mining include the opportunity to enjoy greater levels of income and consumption than would otherwise be possible and, more importantly for the longer term, to promote broader economic development and elimination of poverty through wise investment of mining revenues in education, health care, physical infrastructure and other forms of capital.
- Identifies the potential problems of mineral dependence, including: vulnerability to external market forces largely outside the control of individual companies and governments, the difficulties of adjusting to the structural economic changes that result from large or booming mineral sectors, and the political problems that seem to accompany mineral dependence in some countries.
- Reviews recent comprehensive and systematic studies of the link between mineral dependence and broader economic development. The interpretation here is that there is no compelling evidence that the mineral economies perform more poorly than other nations. To be sure a number of mineral economies have performed poorly, but the evidence suggests that mineral wealth can be managed in such a way that the potential problems of mineral dependence are minimized or avoided.
- Argues that government policies and institutions are critical to realizing the potential benefits of minerals. Specifically, this module argues that governments are decisive in ensuring that mineral wealth is created in

the first place efficiently and in a manner consistent with social values for environmental quality and other social preferences; the net benefits from mining are shared equitably among the various interested parties; the macroeconomic and political problems associated with mining are managed properly; and the benefits of mining are sustained over the longer term through appropriate investment.

## INTRODUCTION

National economies dependent on mineral production have not always performed well. Yet this poor performance is not inevitable. Minerals represent potential wealth. Realizing this potential depends critically on good institutions and governance.

This module aims to foster a better understanding of the role minerals can play in economic development and, ultimately, to encourage better institutions and governance. It sets the stage by identifying the mineral economies and assessing their recent economic performance, identifying the potential benefits and problems associated with mineral development and dependence, and provides an overview of the public-policy challenges of mineral development.

The focus is primarily on large-scale mining and as such, the special issues and problems of small-scale and artisanal mining are largely ignored. It also focuses on national issues, rather than on the somewhat different set of issues and problems of local communities and on economic, legal, and political issues rather than environmental and social aspects of mining and mineral development.

Module 1 draws heavily on a larger document prepared for the Mining, Minerals and Sustainable Development Project (Eggert, 2001).

## I. THE MINERAL ECONOMIES

As a starting point it is instructive to identify which nations are dependent on mineral production and examine their recent economic and social performance. There are no standard definitions of a “mineral economy.” Several possibilities exist, and which definition is “correct” depends on the purpose of the analysis. One possibility is to focus on exports and examine mineral exports as a percentage of total exports. This definition would be appropriate if concerns about potential problems of mineral dependence related primarily to international trade in minerals and its effect on economic performance. Another possibility is to look at the relative importance of mining in a nation’s overall set of economic activities--that is, examine value added in mineral production as a percent of gross domestic product (GDP), the estimated total value of final goods and services produced in an economy. This measure might be appropriate if the problems of mineral dependence related to how mining is linked, or not linked, to the rest of an economy. Finally, if the problems of mineral dependence relate primarily to how governments collect and use their mineral revenues, then an appropriate measure might be government revenues from mining as a per cent of total government revenues.

In fact, as discussed later in the module, the potential problems of mineral dependence relate to all three areas--international trade, mining’s links to other domestic economic activities, and how government uses mineral revenues. Thus, one might try to construct an index incorporating all three measures of mineral dependence. Lack of data for a large number of countries over an extended period of time, however, precludes such a measure. Instead, this module uses data on international trade as a proxy for mineral dependence--more specifically, mining’s percentage share of a nation’s total exports.

Table 1.1 lists those developing nations whose mining exports exceeded 10 per cent on average during the 1990s. To be sure, the choice of 10 per cent as a cutoff is arbitrary. But most of the developing countries that we expect on a list of “mineral economies” are included. In addition, the table includes other indicators of economic and social growth and development in each nation. Casual inspection of this list reveals the following:

- For 37 developing countries, mining’s share of total exports exceeds 10 per cent and in this sense can be considered “mineral economies”;
- Geographically, 15 are from sub-Saharan Africa, 10 from Latin America and the Caribbean, 8 from Europe and Central Asia, 2 from the Middle

East and North Africa, and 2 from East Asia and the Pacific;

- In terms of per capita income, the World Bank classifies 20 of these nations as Low Income, 15 as Lower Middle Income, and 2 as Upper Middle Income;
- Mining represents more than 50 per cent of exports for 8 nations, between 30 and 49 per cent for 14 nations, and between 10 and 29 per cent for 15 nations;
- Looking at GDP growth in the 1990s, 10 nations had negative annual average growth (for the most part, former centrally planned economies), 12 had annual average growth rates between 0 and 3 per cent, and 13 had annual growth rates greater than 3 per cent per year;
- Examining the broader United Nations Human Development Index (HDI), we find index numbers for the year 2000 ranging from 0.275 in Sierra Leone to 0.831 in Chile (the HDI is a composite index incorporating life expectancy, adult literacy rates, enrollment in educational institutions, and per capita GDP—box 1.1 illustrates the difference between economic growth and development); and
- In terms of growth in HDI since 1980 (based on very incomplete data), we find that, although most nations had rising HDI numbers of this period, three mineral economies had HDI numbers that fell—the Russian Federation, Zambia, and Zimbabwe.

What this initial inspection of the data suggests is that, not surprisingly, the mineral economies of the developing world are diverse in a number of ways, such as their dependence on mineral exports, geographic location, levels and growth of income and levels and growth in broader measures of economic development. The mineral economies include some of the poorest nations (Guinea, Niger, Zambia), but also developing nations that have been among the better economic performers of the last 20 years or so (Chile and Botswana, although Botswana has been devastated over the last decade because of the large percentage of its population infected with the HIV virus).

#### Box 1.1: Economic Growth versus Development

GDP is an estimate of the value of goods and services produced within a nation's boundaries in a specified time period, usually one year. GDP per capita is an important indicator of a nation's well-being. Growth in GDP per capita is usually what people mean when they refer to the term economic growth. The level and growth in GDP per capita are undoubtedly the most important indicators of a nation's economic well-being.

But growth in per capita GDP is not a perfect or complete measure of a nation's economic development—a broader concept that, in addition to per capita GDP (or monetary income) includes health, level of education, environmental and social quality, income distribution and poverty reduction. HDI represents an attempt to quantify economic development. The HDI is a composite index including per capita GDP, life expectancy, adult literacy rates, and enrollment in educational institutions (see Table 1.1).

For comparison purposes, Table 1.2 presents similar data for the world as a whole, as well as for nations in different income groups and geographic regions.

Given the wide range of experiences among the mineral economies, it is not surprising that a number of perspectives and opinions have developed on whether mineral production is, on balance, positive or negative for an economy. The next two sections of the module summarize, first, the potential benefits from mineral production and, second, the potential problems of mineral dependence.

**Table1.1 A profile of the mineral economics**

Country	Mining's Share of Exports, 1990-99 (percent)	Gross National Income Per Capita, 2000 (\$US)	Gross Domestic Product (annual average % growth)		United Nations Human Development Index <sup>b</sup>		
			1980-90	1990-2000	1980	1990	2000
Guinea	84.7	450	..	4.3	..	..	0.414
Congo, Dem/Rep	80.0	100 <sup>a</sup>	1.6	-5.1	..	..	0.431
Zambia	74.8	300	1.0	0.5	0.463	0.468	0.433
Niger	70.6	180	-0.1	2.4	0.254	0.256	0.277
Botswana	70.0	3,300	10.3	4.7	0.556	0.653	0.572
Namibia	55.4	2,030	1.3	401	..	..	0.61
Jamaica	51.3	2,610	2.0	0.5	0.69	0.72	0.742
Sierra Leone	50.0	130	1.2..	-4.3	..	..	0.275
Suriname	48.3	1,890	4.2	..	..	..	0.756
Chile	46.6	4,590	1.8	6.8	0.737	0.782	0.831
Mauritania	46.0	370	1.9	4.2	0.36	0.39	0.438
Papua new Guinea	44.08	700	-0.1	4.0	0.441	0.479	0.535
Peru	43.7	2,080	5.4	4.7	0.669	0.704	0.747
Mongolia	43.0	390	1.4	1.0	..	0.657	0.655
Central African Republic	42.1	280	..	2.0	0.351	0.372	0.375
Ukraine	40.0	700	0.8	-9.3	..	0.795	0.748
Mali	40.0	240	1.7	3.8	0.279	0.312	0.386
Togo	37.7	290	-0.2	2.3	0.443	0.465	0.493
Bolivia	35.6	990	..	4.0	0.548	0.597	0.653
Guyana	35.0	860	..3.0	..	0.679	0.68	0.708
Ghana	34.0	340	1.0	4.3	0.468	0.506	0.548
South Africa	30.0	3,020	2.5	2.0	0.663	0.714	0.695
Jordan	28.9	1,710	..	5.0	0.636	0.677	0.717
Kazakhstan	23.2	1,260	..	-4.1	..	..	0.75
Kyrgyz Republic	21.2	270	4.2	-4.1	..	..	0.712
Morocco	20.0	1,180	..	2.3	0.474	0.54	0.602
Armenia	20.0	520	..	-1.9	..	0.759	0.754
Uzbekistan	18.4	360	..	-0.5	..	0.731	0.727
Cuba	17.8	500 <sup>a</sup>	..	4.2	..	..	0.795
Tanzania	15.8	270	..	2.9	..	0.422	0.44
Macedonia, FYR	13.1	1,820	..	-0.8	..	..	0.772
Russian Federation	12.3	1,660	..	-4.8	0.809	0.824	0.781
Zimbabwe	12.2	460	3.6	2.5	0.572	0.597	0.551
Brazil	10.9	3,580	2.7	2.9	0.679	0.713	0.757
Bulgaria	10.3	1,520	3.4	-2.1	0.763	0.786	0.779
Senegal	10.3	490	3.1	3.6	0.33	0.38	0.431
Angola	10.0	290	3.4	1.3	..	..	0.403

**Notes:**

<sup>a</sup>1999 data (from Webber-Fahr, 2002).

<sup>b</sup>The index combines a number of indicators of development in a composite number, ranging from a minimum value of 0 and a maximum value of 1.0. The indicators are life expectancy; adult literacy rates; primary, secondary and tertiary gross enrolment ratios in educational institutions; and per capita gross product.

".. " implies data unavailable.

**Sources:**

Export data: Export data: Monika Weber-Fahr, "Treasure or Trouble? Mining in Developing Countries," paper published by World Bank Group's Mining Department, Washington, D.C., 2002.

Gross national income, growth in gross domestic product: World Bank, World Development Indicators 2002 (Washington, D.C., World Bank, 2002).

UN Human Development Index: United Nations Development Programme, Human Development Report 2002 (New York, Oxford University Press, 2002)

**Table 1.2 Worldwide development indicators**

Country Group	Mining's Share of Exports, 2000  (per cent)	Gross National Income Per Capita, 2000  (\$US)	Gross Domestic Product (annual average % growth)		United Nations Human Development Indexa
			1980- 1990	1990- 2000	2000
<b>World</b>	3	5,170	3.3	2.7	0.722
By Income Group					
<b>Low Income</b>	3	410	4.5	3.2	0.554
<b>Middle Income</b>	4	1,970	3.3	3.6	0.747
<b>High Income</b>	2	27,680	3.3	2.5	0.930
By Region (Low & Middle Income Only)					
<b>East Asia &amp; Pacific</b>	2	1,060	7.9	7.2	0.726
<b>Europe &amp; Central Asia</b>	6	2,010	-1.5	..	..
<b>Latin America &amp; Caribbean</b>	9	3,670	1.7	3.3	0.767
<b>Middle East &amp; North Africa</b>	2	2,090	2.0	3.0	..
<b>South Asia</b>	2	440	5.6	5.6	0.570
<b>Sub-Saharan Africa</b>	8	470	1.6	2.5	0.471

**Notes**

a The index combines a number of indicators of development in a composite number, ranging from a minimum value of 0 and a maximum value of 1.0. The indicators are: life expectancy; adult literacy rates; primary, secondary, and tertiary gross enrolment ratios in educational institutions; and per capita gross domestic product.

".." implies data unavailable

**Sources:**

*World Bank, World Development Indicators 2002 (Washington, D.C., 2002).*

*United Nations Development Programme, Human Development Report 2002 (New York, Oxford University Press, 2002).*

## II. BENEFITS OF MINING: MINERALS AS WEALTH

According to conventional economic theory, a nation richly endowed with mineral resources should be better off than a nation poorly endowed with such resources, other factors being equal. The idea is simple: Mineral resources represent a form of capital, which can be thought of as anything with the ability to generate economic well-being or development, such as a highly educated workforce or abundant agricultural land. Generally speaking, the more capital a nation has, the higher its level of economic well-being or development.

Mineral resources represent just one form of natural capital, which also includes land, air, water, and flora and fauna, as well as energy resources. Capital also comes in forms other than natural capital. Human capital comprises the skills and talents embodied in educated and healthy people. Social capital represents the productiveness or ability to generate well-being through governments, universities and other societal institutions. Finally, man-made physical capital consists of buildings, equipment and processes, roads and other transportation systems.

Capital is essentially synonymous with the concept of wealth. To an individual or family, wealth represents the value of the capital (or assets) it owns, such as land, a house, an automobile, stock shares and other financial instruments, and so on. More broadly, society's wealth consists of the capital it owns in all forms identified above--natural, human, social, and man-made.

It is in this sense that mineral resources represent capital and wealth. However, minerals in the ground are only potential wealth. They have the potential to create well-being. For this potential to be realized, however, mineral wealth must be created. In one sense, mineral wealth is created if someone pays to acquire the right to explore for minerals on a property or for the right to develop a known but undeveloped mineral deposit. The seller benefits from the proceeds received from the sale of the exploration or development right. In a broader sense, the creation of mineral wealth requires that a deposit be discovered, developed, and mined for a profit.

Once created mineral wealth brings benefits in the form of consumption or investment. If consumed, the goods and services purchased with mineral revenues bring immediate benefits to the purchaser. For example, miners spend part of their wages on food and clothing, which makes them better off than if they did not have food or clothing. Moreover, there are spillover (or multiplier) benefits

when food or clothing merchants, in turn, spend a portion of their new income on goods and services that make them feel better off than before, and so on. If mineral revenues are invested, the goods and services purchased with these revenues enhance society's ability to create well-being in the future. For example, mineral revenues might be invested in financial instruments, such as stocks or bonds, which will earn income in the future; other businesses which will generate future income; physical infrastructure, such as roads and electric power systems, which will enhance the ability to undertake future economic activities; or education or health care which will create healthier and better educated workers and citizens for the future.

To better understand how the wealth (and capital) of nations varies worldwide, the World Bank estimated national wealth and its components<sup>1</sup>. The data are for 1994. These studies estimate values for capital in three categories. The first is natural, and includes the estimated value of land, forests, and subsoil metals, minerals, and fossil fuels. The second is human resources/capital, the combination of human and social capital as defined earlier. The third category is produced assets, which is referred to here as man-made physical capital. Table 1.3 summarizes national wealth by income group. Not surprisingly, the higher the income, the higher the wealth. Looked at slightly differently the gap in per capita wealth between the low-income and high-income nations is \$US291,000. Almost three-quarters of this gap is due to differences in human resources/capital, almost one-quarter is due to differences in produced assets, and less than one-twentieth is due to differences in natural capital.

Table 1.4 summarizes similar data for the mineral economies identified earlier in this module.

For mineral wealth to sustain or enhance broader economic development a portion of the mineral revenues must be invested--either in new mineral wealth, or in other forms of capital (natural, human, social, man-made physical). In other words, over time the only way a nation's wealth can increase is if it saves a portion of its current income and invests the savings in assets.

<sup>1</sup> Kunte, Hamilton, Dixon, and Clemens (1998).

### III. ECONOMIC AND POLITICAL PROBLEMS

Despite the potential benefits of mining, mineral dependence sometimes brings with it economic and political problems. Broadly speaking, these problems can be grouped into three categories: unfavourable (external) market forces, Dutch disease and internal economic stresses, and political problems<sup>2</sup>.

#### Unfavourable (external) market forces

Almost all minerals on which national economies are dependent are sold at prices determined in international markets and, in most cases, outside the control of individual mining companies or countries. Thus, the health of most mineral companies and national mineral economies is influenced significantly by factors outside the control of an individual company or country — just one aspect of economic globalization (see Box 1.2). There are two ways in which it is often argued that mineral economies suffer as a result of unfavorable market forces.

**Table 1.3 National wealth estimates, by country income group, 1994**

Country Group	Total Wealth	Human Resources	Natural Capital	Produced Assets	Human Resource	Natural Capital	Produced Assets
	(000 \$US per capita)				(per cent of total wealth)		
High Income	319	236	11	72	74	3	23
Upper Middle Income	115	87	10	19	76	9	17
Lower Middle Income	70	52	6	11	74	9	16
Low Income	28	20	3	5	71	11	18

Notes: Estimates are based on purchasing-power parity (PPP) exchange rates and a discount rate of 4%.

Source:

*Website of the World Bank, Environmental Economics and Indicators* (<http://www-esd.worldbank.org/eei/>), accessed October 2, 2001.

<sup>2</sup> An additional set of problems falls outside the scope of this study because they are local rather than national in scope: the environmental and social damages that often affect local communities and mining regions. For several case studies on the socioeconomic and environmental effects of mining on local communities, see McMahon and Remy (2001).

**Table 1.4 National wealth and its components, the mineral economies, 1994**

Country	Mining's Share of Exports, 1990-99 (per cent)	Total Wealth	Human Resources	Natural-Capital	Produced Assets	Human Resources	Natural Capital	Produced Assets
		(000 \$US per capita)			(percent of total wealth)			
Guinea	84.7	Not available						
Congo, Dem. Rep.	80.0	Not available	"	"	"	"	"	"
Zambia	74.8	15	5	5	4	38	38	25
Niger	70.6	23	8	12	2	36	54	10
Botswana	70.0	89	68	6	15	76	6	17
Namibia	55.4	71	54	7	10	76	10	14
Jamaica	51.3	45	22	3	20	49	7	44
Sierra Leone	50.0	11	6	3	2	58	28	14
Suriname	48.3	Not available						
Chile	46.6	148	116	14	17	79	10	12
Mauritania	46.0	24	14	5	4	60	22	18
Papua New Guinea	44.8	39	25	7	6	64	19	17
Peru	43.7	59	40	5	15	67	8	25
Mongolia	43.0	Not available	"	"	"	"	"	"
Central African Republic	42.1	21	12	6	3	55	30	15
Ukraine	40.0	Not available	"	"	"	"	"	"
Mali	40.0	12	5	5	2	43	41	15
Togo	37.7	18	11	3	4	64	15	21
Bolivia	35.6	36	21	6	9	59	17	25
Guyana	35.0	Not available	"	"	"	"	"	"
Ghana	34.0	27	21	2	4	78	7	15
South Africa	30.0	83	62	4	17	75	5	20
Jordan	28.9	64	48	1	16	74	2	24
Kazakhstan	23.2	Not available	"	"	"	"	"	"
Kyrgyz Republic	21.2	Not available	"	"	"	"	"	"
Morocco	20.0	54	42	2	9	78	4	18
Armenia	20.0	Not available	"	"	"	"	"	"
Uzbekistan	18.4	Not available	"	"	"	"	"	"
Cuba	17.8	Not available	"	"	"	"	"	"
Tanzania	15.8	8	2	2	4	21	27	52
Macedonia, FYR	13.1	Not available	"	"	"	"	"	"
Russian Federation	12.3	Not available	"	"	"	"	"	"
Zimbabwe	12.2	30	17	3	10	59	8	33
Brazil	10.9	89	66	7	16	74	8	18
Bulgaria	10.3	Not available	"	"	"	"	"	"
Senegal	10.3	32	22	5	4	70	17	13
Angola	10.0	Not available	"	"	"	"	"	"

Sources:

Table 1.1 and Arundati Kunte, Kirk Hamilton, John Dixon, Michael Clemens, *Estimating National Wealth: Methodology and Results*, Environmental Economics Series (Washington, DC, World Bank, 1998)

### Box 1.2: Economic globalization

International flows of goods and services and financial capital increased significantly in the latter part of the 20<sup>th</sup> century. Exported goods and services increased from 12 per cent of world GDP in 1965 to 22 per cent in 2000. Foreign direct investment (FDI) increased from \$US 200 billion in 1990 to almost \$US 900 billion in 1999<sup>a</sup>. This increase in exports and financial flows is often referred to as *economic globalization*. At the same time, globalization has political and cultural dimensions—the spread of democratic political systems and of North American and Western European music, films, literature, and culture more generally (including fast-food restaurants). Thus the “average” national economy has become increasingly dependent on and influenced by decisions and developments outside its national boundaries, although the experiences of individual nations vary from case to case.

The causes of economic globalization include:

- Technological innovation lowering the costs of transportation, communication, and information storage, processing, and retrieval;
- Trade liberalization reducing barriers to international trade, especially tariffs;
- Changes to institutions, including the rise of multinational corporations and non-governmental organizations, as well as the increased role in economic matters of international organizations such as the United Nations and the World Bank;
- Growing agreement that market economies and free trade are keys to economic growth and development; and
- A variety of cultural phenomena, including the dominance of the English language as a global language and the spread of popular culture (art, films, books, music) from the United States and other English-speaking countries.<sup>b</sup>

The arguments for economic globalization are simple and compelling, at least to most economists: well-functioning markets and free and open international trade facilitate faster economic growth and higher living standards overall than economic systems with pervasive government regulations and restricted international trade.

Nevertheless, economic globalization is not without its critics, who argue that:

- The distribution of benefits from globalization is unfair, specifically that most benefits are realized by rich nations or individuals, leading to conflict both within and between nations; and
- Many developing nations feel increasingly helpless, having lost control of their national economies, which have become increasingly affected by decisions and actions of other nations, multinational corporations, international markets, and international organizations.<sup>c</sup>

On balance, what is one to make of economic globalization? A recent review concludes:

*“Those of us who believe in globalization need to defend it. We need to stick up forthrightly for the benefits it has provided and will continue to provide—and to emphasize not just the actual goods, services and capital that flow across international borders, but the associated trade in ideas, skills, and institutions as well. When accompanied by sensible, market-oriented public policies, globalization can be a great boon to national wealth and social development.*

*An additional line of defense, perhaps just as important, is to be honest about the meaning and limits of globalization. Globalization is not a magic cure-all for what ails a nation’s economy, nor is it a plot by profit-hungry megacorporations to exploit workers and despoil the environment. Globalization is not the return of colonialism, nor is it the arrival of world government. At the most fundamental level, globalization simply means an expansion of the range of commercial activities. Acts of buying, selling, producing, borrowing, and lending that used to be ruled out by geographic, technological, or legal barriers have now become practical. Seeking out and sorting through the possibilities opened up by globalization will require a daunting amount of effort, flexibility, and change, precisely because globalization embodies such a vast and marvelous array of new economic opportunities.”<sup>d</sup>*

<sup>a</sup>Taylor (2002).

<sup>b</sup>Intriligator (2003).

<sup>c</sup>Intriligator (2003).

<sup>d</sup>Taylor (2002).

The first suggests that declining prices of primary commodities over the long-term, relative to the prices of manufactured goods, place mineral-dependent economies at a disadvantage relative to economies more dependent on manufacturing. National economies, the argument goes, would be better off and would experience higher rates of economic growth by concentrating on manufacturing and industrialization. Stated slightly differently, over time, a nation emphasizing primary-product exports would have to export ever-increasing quantities of minerals to purchase the same basket of imported manufactured goods, making continued economic growth more difficult.<sup>3</sup>

Whether, in fact, mineral and other primary-product prices have fallen over the long-term relative to the prices of manufactured goods has been the subject of much study and debate. Researchers disagree on a number of methodological issues. A review of recent studies concludes that commodity prices fell over the 1980-1999 period relative to manufactured-good prices.<sup>4</sup> However, this review also finds that the decline was due to a number of random shocks that on balance placed greater downward than upward pressures on prices. The review concludes that the two-decade fall in commodity prices does not represent a predictable trend.

Moreover, even if relative commodity prices fell, the implications of this decline for mineral-dependent nations are not clear. An important reason why mineral prices fall over some time periods is a reduction in production costs, made possible in part by new technology and better management and production practices. To the extent that falling mineral prices are accompanied by cuts in production costs at least as large, mineral-dependent economies may be no worse off than previously.

The second variant emphasizes the volatility of mineral prices over the short-term and the negative effect of price volatility on economic growth. The proposition is that:

- Volatile mineral prices lead to volatile revenues for both mining companies and governments.
- Volatile revenues are uncertain and difficult to predict.
- Less-certain revenues lead to less investment than would occur if overall revenues were similar but more certain.
- Less investment today leads to lower rates of economic growth in the future.

<sup>3</sup> This proposition is usually attributed to Prebisch (1950) and Singer (1950)

<sup>4</sup> World Bank (2000).

For this proposition to be correct, two conditions must hold:

- 1) mineral prices are more volatile than prices of other goods and services, and
- 2) price volatility leads to less investment and lower economic growth.

With regard to the first condition, it is well known that prices for many minerals are volatile from one year to the next. This volatility is due primarily to the strong link between mineral demand and the state of the macroeconomy. More specifically, demand for most minerals rises and falls significantly over the macroeconomic business cycle because most minerals are used in sectors of the economy where spending rises and falls even more significantly than overall GDP—construction, transportation equipment, consumer durables, and capital equipment. Regarding whether commodity prices are more volatile than prices for other goods and services, the World Bank (2000) finds that they have been more volatile since the collapse of the Bretton Woods system in the early 1970s. Prices for agricultural and mineral commodities, in particular, have been more volatile than manufactures' prices. Regarding the second condition, whether greater volatility leads to lower investment and economic growth, the evidence is mixed.

A 1995 study found no relationship between terms-of-trade volatility and economic growth<sup>5</sup>. Another investigation found that volatility in commodity prices did not negatively influence growth prospects for exporters of agricultural and mineral commodities in sub-Saharan Africa<sup>6</sup>. Still another study found that uncertainty associated with commodity prices does result in lower growth rates, even though this negative effect on growth can be overcome with good public policies and foreign aid.<sup>7</sup>

An important note is that price volatility can be managed. Some projects can be financed with commodity loans in which repayment is made in the form of physical material (the commodity) rather than in the form of money, reducing a mine's vulnerability to fluctuating mineral prices. In some mineral markets mining companies can reduce revenue volatility by hedging sales through the use of financial derivatives such as futures and options. In any market known to be volatile, when mineral prices are high, governments can set aside revenues in a stabilization fund to be used when prices and revenues are low.

<sup>5</sup> Sachs and Warner (1995).

<sup>6</sup> World Bank (2000).

<sup>7</sup> Dehn and Gilbert (1999).

## Dutch disease and internal economic stresses

Another set of potential problems associated with mineral dependence emphasizes structural change within a national economy and the potentially negative effects on economic growth due to a booming or expanding mineral sector.

The so-called *Dutch disease* is a phrase coined after the internal economic stresses experienced by the Dutch economy in the 1960s and 1970s, following the discovery and development of large natural gas reserves<sup>8</sup>. The “disease” was the structural adjustment necessary to accommodate the expansion of natural gas production and exports. The primary structural adjustment was the shrinking of other traditional export sectors of the Dutch economy which found it increasingly difficult to survive—as the expanding natural gas sector drove up wages economy-wide, and as expanding gas exports drove up the value of the Dutch currency. Other national economies with expanding natural resource sectors had similar experiences.

The basic model of the Dutch disease can be understood by considering a simple national economy with three sectors:

- A booming commodity sector which exports natural resources to a world market;
- A traditional export sector, such as agriculture or manufacturing, which is not experiencing a boom; and
- A non-traded sector, which produces goods and services not exported or imported because of prohibitively high transportation costs.

Expanding natural-resource exports may have two important effects:

- *Input costs, especially wages, may rise economy-wide.* Expansion of the booming resource sector may bid up these costs as it competes with the other two sectors of the economy for inputs. As long as there is no significant unemployment or other underutilization of inputs, input costs are likely to rise. The traditional export sector of the economy will likely contract because its input costs rise and, yet, world markets effectively cap the price at which it can sell its exports (unless the traditional exporter has some degree of market or monopoly power). Firms in the non-traded sector are likely to be less affected by the increase in input costs, because at least some of this increase is likely to be passed on to consumers; and even though their input costs increase, overall sales of non-traded goods and services may also increase because overall national income increases as a result of the booming resource sector.

<sup>8</sup> See Kremers (1986).

- *A nation's exchange rate is likely to appreciate* especially when natural-resource exports are a large share of its total exports. A unit of domestic currency, as a result, will purchase more units of foreign currency. This appreciation is good for domestic consumers who see the effective price of foreign goods and services fall. But currency appreciation is bad for exporters whose revenues are determined by prices denominated in foreign currency; the effective price that these exporters receive for their exported goods and services denominated in domestic currency falls.

The net effect of rising input costs and currency appreciation is that the traditional export sector, usually agriculture or manufacturing, shrinks at the same time that the natural-resource sector booms. The non-traded sector may grow or shrink depending on what factor dominates: the growth-inhibiting effects of rising input costs, or the growth-promoting effects of higher incomes and demand because of the growing natural-resource sector. In a very important sense, Dutch disease is not a “disease” at all – it represents the mechanisms through which an economy adjusts to the beneficial development of a newly developed natural resource. The economy as a whole expands by taking advantage of its natural resources.

There are two ways, however, that an initially beneficial expansion of natural-resource exports could be detrimental to long-term economic growth:

- If the boom in natural-resource exports is temporary, it is possible that an economy could find it difficult to make the transition back to the export sectors on which it traditionally relied, such as agriculture and manufacturing. If the natural resource boom were short, then economic growth over the long-term could end up lower than if the economy had not shifted resources into the natural-resource sector to begin with.
- Some analysts argue that minerals are detrimental to an economy because they have a lower potential for long-term economic growth than manufacturing. If true, inputs and resources used in mining could be used more effectively (i.e., to generate more economic growth) in manufacturing.

One variant of this argument is that mining has fewer beneficial linkages with the rest of the economy than manufacturing.<sup>9</sup> Mining, according to this line of reasoning, is isolated from the rest of an economy – often foreign-owned, operated largely by expatriate workers, using inputs (especially equipment) purchased abroad. The available evidence, however, on the extent of linkage is mixed. For Australia, estimates of output, income, and employment multipliers range from 1.5 to 2.5 for mineral production, compared to about 1.5 for agriculture, 1.8-2.3

<sup>9</sup> See Hirschman (1958), Seers (1964), Baldwin (1966).

for manufacturing, and 1.2-1.6 for services.<sup>10</sup> Estimates for South Africa indicate that output and employment multipliers for mining are either slightly less than or comparable to economy-wide multipliers for the economy as a whole.<sup>11</sup> Thus it is not obvious that mining is consistently and systematically less linked to overall economic activities, compared to other sectors.

Another variant of the argument that mining has a lower potential for economic growth than manufacturing relates to learning-by-doing. The argument is that mining has less learning-by-doing than manufacturing. Learning-by-doing leads to lower production costs over time and, as a result, greater productivity and profitability, other factors remain the same. The enhanced productivity could be either internal or external to a mining or manufacturing firm. Internal learning-by-doing would be reflected in reduced production costs for the mining or manufacturing firm. There is little to suggest, however, that mining is characterized by less internal learning than manufacturing. Mining has experienced a revolution in the areas of mechanization and automation over the last several decades.

External productivity enhancements, on the other hand, would be reflected in productivity improvements that spill over to other sectors of the economy – for example, productivity improvements developed in the telecommunications or information-technology sectors that benefit or spread to the entire economy. There has been little empirical analysis of this proposition. A cross-country econometric analysis finds little evidence that natural-resource dependent nations have lower rates of human-capital accumulation than resource poor-nations, a trend which we would expect if resource industries, including mining, had lower external learning-by-doing than other economic sectors.<sup>12</sup>

## Political problems

Probably the most compelling and thorny potential problems associated with mineral dependence are political rather than economic. Poor economic performance in mineral economies, arguably, is traceable largely to how governments and society respond to large windfall revenues from mineral production. Too often, these revenues are squandered rather than productively invested.

One line of reasoning focuses on government protection of those industries, especially agriculture and manufacturing, that otherwise would contract as part of the Dutch disease effects discussed above. Governments with newfound mineral revenues find it hard to resist the call to protect those sectors adversely affected

<sup>10</sup> See Porter (1984). For example, an employment multiplier of 2.0 means that for every worker employed directly in mining, an additional worker is employed either in providing inputs to the mine (such as catering services) or in downstream processing (such as metal fabrication)—that is, one worker in mining plus one worker in associated industries equals two workers. Output and income multipliers are defined similarly.

<sup>11</sup> Stilwell, et al. (2000).

<sup>12</sup> Sachs and Warner (1999a).

by a booming mineral sector. Protection comes in the form of tariffs, quotas, and other restrictions on imports. Trade protection leads to a misallocation of productive resources and, over time, lower rates of overall economic growth – too many resources being allocated in protected, inefficient industries, too few in the more-efficient sectors. The tendency of governments to protect manufacturing from international trade, it is argued, is exacerbated by fascination with manufacturing as a key to economic growth and development. A 1999 study finds some statistical evidence that natural resource-abundant nations are less open to international trade than natural resource-poor nations.<sup>13</sup>

Another line of reasoning focuses on the link between mineral abundance, on the one hand, and the strength and quality of government institutions on the other. A recent paper reviews the literature in this area.<sup>14</sup> This literature suggests that mineral abundance leads to weak, inefficient, and often corrupt government institutions which in turn leads to low rates of economic growth over time. The author of the review summarizes this work in the following way: “Societies that are not ‘up against it’ prefer to avoid policy changes that vested mineral interests view as potentially painful” and “governments tend to operate as a patron and dispenser of favours, not as an organizer of productive energies.” There are a number of noteworthy studies in this literature:

- One suggests that being poor in natural resources may be an advantage. Political power tends to concentrate in the natural resource sector, as well as in urban households that benefit from a stronger national currency (imports become cheaper). The natural resource sector and urban elites together block attempts to promote export-oriented manufacturing.<sup>15</sup>
- Another analysis focuses on oil-exporting countries and observes predatory states in which rent-seeking substitutes for rent creation.

In this sort of state the market has so penetrated all aspects of public life that almost anything is up for sale. Rentier behaviour is the norm in both public and private sectors; thus productive investment is less likely.<sup>16</sup>

- A 1999 book presents sixteen cases, including two from mining, five from oil, and nine from agriculture, forestry, land, and water.<sup>17</sup> It finds a large number of failures in public policy--ill-defined property rights, mispricing of inputs and products, poor investment decisions by state agencies and wasteful spending by government agencies not accountable for their decisions. Nevertheless, the study concludes that there is nothing inevitable about how economies dependent on natural resources

<sup>13</sup> Sachs and Warner (1999a).

<sup>14</sup> Davis (1998).

<sup>15</sup> Mahon (1996).

<sup>16</sup> Karl (1997, p. 236).

<sup>17</sup> Ascher (1999).

perform. It concludes that “natural resources represent potential wealth; without the resources, developing nations would be even poorer.”<sup>18</sup>

- Finally, another analysis finds empirical support for the notion that natural resource-rich nations have weak government institutions, the likelihood being that such rich nations are more likely to have “particularly low scores on international measures of bureaucratic efficiency and institutional quality.”<sup>19</sup>

<sup>18</sup> Ascher (1999, p. 6).

<sup>19</sup> Sachs and Warner (1999a, p. 26).

## IV. SYSTEMATIC AND COMPREHENSIVE ANALYSES OF PERFORMANCE

As the previous two sections demonstrate, there are potential benefits and problems associated with mineral dependence. The natural question arises: is there any systematic relationship between mineral wealth and economic development?

Unfortunately most analyses are based on case studies and generalized, stylized facts. The number of systematic and comprehensive analyses is few.

The most recent and comprehensive of these are a series of papers by *Sachs and Warner*.<sup>20</sup> Although these studies cover slightly different time periods, they all study the relationship between natural resource dependency in 1970 and economic growth over the following two decades. The studies represent cross-country comparisons of about 90 developing nations. The Sachs and Warner studies, taken together, suggest that a nation's rate of economic growth is inversely related to natural-resource intensity--that is, the larger natural-resource exports as a percentage of GDP, the lower its growth rate for GDP per capita, even after taking into account other factors greatly influencing growth, such as the initial level of GDP per capita, international trade policy, government efficiency, and investment rates.

This body of work also suggests that natural-resource intensity is, in a statistical sense, negatively associated with both the quality of legal and government institutions and the extent to which a nation's economy is open to international trade. That is, the higher a nation's reliance on natural resource exports, the poorer the quality of its legal and government institutions and the more closed an economy is to international trade. Poor institutions and barrier-bound trade contribute to lower rates of economic growth.

A review of the Sachs and Warner studies cautions readers against reading too much into the findings and concluding that mineral economies in the future are doomed to lower economic growth:<sup>21</sup>

*The sample of nations is incomplete.* The Sachs and Warner data represent only about half of the world's economies – those for which data were available. Data were

<sup>20</sup> Sachs and Warner (1995, 1997a, 1997b, 1999a, 1999b, 2001).

<sup>21</sup> Davis and Tilton (2002).

more likely to be available for the mineral economies (mineral wealth attracted colonial rulers who set up statistical offices) than for the non-mineral economies in the developing world (without the mineral wealth to attract colonial rulers and their statistical offices). If the sample of countries for which data are available is biased, then it is possible that the results are biased as well.

*The results are valid only for the time frame of analysis.* Sachs and Warner find slower growth in the mineral economies between 1970 and 1990. A 2002 study comes to opposite conclusions based on assessments of different and longer time periods.<sup>22</sup> It argues that the 1970s and 1980s were unusual in that much of the slower growth in the mineral economies could be explained by inward-looking trade policies and the growth-inhibiting effects of nationalization in several natural resource economies in the 1970s (including, Indonesia, Venezuela, Zaire and Zambia). Similarly, the endpoints of the time period studied influence the results; another analysis finds that a nation's rate of growth in GDP per capita between 1960 and 1992 increased the fraction of GDP in mining in 1988.<sup>23</sup>

*Sachs and Warner's statistical method is open to question.* A preliminary analysis suggests that the negative relationship between resource intensity and growth in GDP per capita is no longer apparent when a more appropriate statistical technique is used.<sup>24</sup>

What are we to make of all this evidence that includes descriptive statistics, case studies, theory, comprehensive (statistical) analyses? An extreme conclusion is that nations should avoid mining. One group argues that public financing for mining and fossil fuels should be phased out because the “extractives [extractive industries] do not foster sustainable development or alleviate poverty.”<sup>25</sup> Another analysis concludes a review of the role of oil, natural gas, and mining in the developing countries thus:

“We believe the best course of action for poor states would be to avoid export-oriented extractive industries altogether, and instead work to sustainably develop their agricultural and manufacturing sectors—sectors that tend to produce direct benefits for the poor and more balanced forms of growth.”<sup>26</sup>

On the other hand even Sachs and Warner, who have the strongest empirical evidence that natural resources (including minerals) are detrimental to national economic development, do not draw these conclusions. Instead, they conclude:

“We do not agree that this curse of natural resources is an iron law of political economy . . .

<sup>22</sup> De Ferranti, et al. (2002).

<sup>23</sup> Sala-i-martin (1997).

<sup>24</sup> Lederman and Maloney (2002).

<sup>25</sup> Friends of the Earth (2000).

<sup>26</sup> Ross (2001, p.17).

There is much to be learned from studying the resource-abundant developing countries that have done well in the recent past: Botswana, Chile, Malaysia, and Mauritius . . .

Which is worse: the natural resources curse, or the policy errors made as countries attempt to avoid the curse? . . .

Although [we do] find evidence for a negative relationship between natural resource intensity and subsequent growth, it would be a mistake to conclude that countries should subsidize or protect non-resource-based sectors as a strategy for growth.”<sup>27</sup>

The informed consensus is that:

- The mineral economies and their performance are diverse;
- There is little compelling evidence that mining systematically and inevitably leads to poor economic performance;
- Minerals have the potential to contribute significantly to broader economic development; and, most importantly,
- Governments and their policies play a decisive role in determining whether minerals are a blessing or a curse.

<sup>27</sup> Sachs and Warner (1999a, p. 26).

## V. CHALLENGES FOR PUBLIC POLICY

Governments are responsible for establishing and maintaining the overall framework for economic development in a nation. The starting point for any discussion of government's role in mining is a delineation of its broader responsibilities. Governments need to find the right mix of public and private activities so that they satisfy five preconditions for economic development:

- 1) Precondition #1: A foundation of law and property rights;
- 2) Precondition #2: A nondistortionary policy environment (including macroeconomic stability);
- 3) Precondition #3: Investment in people and infrastructure;
- 4) Precondition #4: Protection of the vulnerable; and
- 5) Precondition #5: Protection of the environment.<sup>28</sup>

In defining the scope of government activities in these areas, most economists believe that governments should limit their activities to:

- *Facilitating market activity:* Well-functioning markets require well-defined property rights and a system for money and banking which only governments are capable of establishing and maintaining (see Precondition #1).
- *Promoting economic efficiency:* In some situations, markets do not perform well. Economists refer to these situations as “market failures.” One type of failure is excessive environmental pollution when the damages caused by pollution are not fully considered in decisions by entities that generate the pollution such as households, governments, or firms (see Precondition #5). Another type of failure is in the provision of public goods--such as national defense, infrastructure, and education--which typically will be under-provided from the perspective of society as a whole if left completely to the private sector (see Precondition #3). Finally, only government can create a nondistortionary policy environment (Precondition #2), including macroeconomic stability, which in turn promotes economic efficiency.

<sup>28</sup> World Bank (1997, chapter 3).

- *Promoting equity*: In this context, “equity” refers to the fair distribution of income, wealth, and the benefits and costs of human activities. Protecting those most vulnerable in society (Precondition #4), often those living in poverty, is an important aspect of this goal of government activity.

Within these broader roles and responsibilities for government, let us now turn to the challenges for government in the mineral sector. This can be organized around four themes:

- *The Creation Challenge*: Before mineral wealth can contribute to broader economic development, it must be created, in the sense that it must be discovered and developed efficiently and in a manner consistent with social preferences for environmental quality and other social and cultural values.
- *The Distribution Challenge*: Once created, mineral wealth must be shared equitably. Meeting this challenge requires sharing the surpluses or rents from mineral production fairly among the various interested parties, including private mining companies, government at all levels (e.g., local, national), local communities, and other organizations or entities that have a stake in mining.
- *The Macroeconomic and Political Challenge*: Nations need to understand and manage the potentially negative consequences of mineral development discussed earlier in this module.
- *The Investment Challenge*: The economic benefits of mining need to be sustained, taking into consideration that a mine is inevitably depleted, by investing an appropriate portion of the revenues from mining in sustainable assets such as education, health, institutions, and other forms of social infrastructure.

## The creation challenge

Minerals in the ground remain just potential wealth until sufficient knowledge is gained of mineral that someone is willing to purchase the right to explore, develop, or mine in a particular location. Government’s key role in this area is facilitating the creation of knowledge on mineral potential. Governments establish the legal and regulatory framework in which mineral exploration and development occur, and most of these frameworks have nothing to do with mining in particular. Module 2 discusses, in detail, the legal framework in which mineral development occurs, however, the main focus is on the following points:

- *Mineral policies should be nondistortionary*. They should not promote or steer investment toward particular sectors, unless there are spillover effects on the economy as a whole that would not be considered by private decision makers. Policy should facilitate the flow of investment

to those sectors with the greatest commercial attractiveness. A nondistortionary policy is one that strives for economic efficiency. “Mineral policy”, whether contained in a comprehensive stand-alone document, or represented as the combined effect of separate policy documents and regulations, typically consists of rules in the following areas:

- Ownership of mineral resources in the ground and of equity in mineral-production facilities;
- Collection and dissemination of basic geologic information;
- Land access and security of tenure for mineral exploration, mine development and mining;
- Mineral royalties and taxation; and
- Environmental protection.

A recent review of national mineral policies concludes that policies should:

- Provide greater access to mineral resources;
- Offer clear and transparent licensing arrangements, security of tenure and the freedom to transfer exploration and mining rights; and
- Allow companies to market their output on commercial terms.

These laws are complemented with provisions, sometimes in investment or tax laws, that provide reasonable freedom to dispose of foreign exchange earnings, apply profit-based taxation on internationally competitive terms, and guarantee stability of those terms for a reasonable period of time.<sup>29</sup>

- *Governments play a key role in the provision of basic geologic information.* Basic geologic information is the basis for perceptions of geologic potential, which in turn importantly influence the commercial attractiveness of investment in mineral exploration and mine development. For regions with a long history of mining this legacy of mining may be sufficient to create perceptions of good geologic potential. In other regions, however, basic geologic information is an important precondition for private mineral exploration. This basic geologic information typically will be underprovided by the private sector acting alone from the perspective of society as a whole because the benefits of undertaking this activity are far in the future, uncertain, and difficult for the private sector to fully undertake. Thus, basic geologic information is usually collected and disseminated by government geological surveys.
- *Tax and fiscal policies influence whether mineral wealth is created.* It is obvious that the overall tax system, the combination of mining-specific provisions

<sup>29</sup> World Bank and Metal Mining Agency of Japan, 2001, as summarized in *Mining Journal*, September 7, 2001, p. 184.

and general tax rules applicable to all business, influences the attractiveness of investing in a region. It is clear that the tax rate matters: the higher the rate, the lower the investment attractiveness, other factors remain the same. Less obvious is the significance of a form of a tax or royalty. A tax based on net income is less discouraging than a tax on gross revenues. See Module 3 for a more complete discussion on fiscal systems.

- *Policies are only nondistortionary and efficient if they incorporate social preferences for environmental quality and other social and cultural values.* Developing such policies is not a simple matter. A partial solution is to require social benefit-cost analyses of the full costs and benefits associated with mine development. The full social costs and benefits include estimates of the value of environmental damage or social disruption that would be caused by a mine and, in addition, estimates of what it would cost to avoid these environmental and social damages. Equally as important, given the inherent difficulties of estimating these environmental and social values, is the process through which decisions about mineral development occur. The critical issues are who decides whether the proposed mineral development occurs, and on what basis. Perhaps in an ideal world, governments would establish rules for permission and approval that would incorporate social preferences without the need for public participation in decision-making. In practice, however, public participation is usually necessary. The challenge is for government to design a system that is:

**Efficient** because it makes provision for appropriate public participation at the lowest cost in terms of time and expense;

**Equitable** because it offers each party that is interested in mineral development an appropriate opportunity to be heard; and

**Predictable**, to enable the process itself to be understood by all parties (i.e., a clear understanding of who can participate, the rules for discussion, and the basis for decision-making).

## The distribution challenge

The next challenge is to share the surpluses of mineral wealth fairly among the various interested parties--private mining companies, governments at all levels, local communities, and other organizations. During the last decade, there has been a growing concern that the distribution is not fair or appropriate in many cases. The specific concern is that local mining communities bear the brunt of the environmental and social costs associated with mining, many of which are uncompensated, and yet receive a meagre share of the surpluses generated by mining. Local communities charge that an inappropriately large share of the surpluses go to national governments which proceed to spend these surpluses on programmes

in other parts of the nation. It is not the purpose of this section of the module to identify what is an appropriate distribution, but rather to introduce the philosophical and practical issues inherent in meeting the distribution challenges.<sup>30</sup>

At a philosophical level, the challenge is to answer the question, “What is fair”? What principles should society use in allocating the surpluses from mining?

There are three possibilities:

- *Aristotle and Proportionality.* This principle, usually attributed to Aristotle, argues that outcomes should be allocated in proportion to each party’s contribution. This principle is appealing and seems reasonable. Business partners, for example, should share in the profits of an activity in proportion to how much financial capital each contributed to the activity. In practice, however, the situation is often more complicated. It can be difficult to determine which parties are relevant and what their contributions are. Consider a new mine. At one level, it seems obvious that those entities providing funds to the project should share the profits in proportion to their financial contributions. At a deeper level, however, governments might arguably be deserving of some of the surpluses. They often provide infrastructure, such as roads and electric power, and thus deserve some of the surpluses. Even more broadly, to the extent that a mineral deposit is a gift of nature belonging to society as a whole, the surpluses might appropriately be shared with society at large.
- *Bentham and Utilitarianism.* The idea that outcomes should be distributed so that they create the greatest good for the greatest number of people is attributed to Jeremy Bentham and other utilitarian philosophers. The goal, therefore, is to distribute the surpluses from mining so that they maximize the total welfare for all interested parties as a group. While intuitively appealing, this principle also suffers from difficulties if put into practice. Consider a mine in a poor community or region. Where is the greatest good? Does it lie with the mining company, which might use the surpluses to invest in additional mineral exploration and mine development? Or with the local community which might spend the surpluses on health care or education? Or in the hands of the national government which might use the surpluses to fund education in even poorer communities elsewhere in the country? Although methods exist for evaluating issues such as these, it is difficult to quantify the rates of return on social investments such as education.
- *Rawls and his Theory of Justice.* John Rawls argued that outcomes should be such that the least well-off group in society be made as well off as possible. Thus when assigning priority among the interested parties, Rawls

<sup>30</sup> The discussion of philosophical and practical issues in this section is based largely on Young (1994).

would give priority to those parties least well-off in terms of income, opportunity, power, or self-respect. Rawls' theory of social justice is more complicated than those of Aristotle and Bentham. His theory recognizes that allocation schemes redistributing income from rich to poor may reduce the incentives for the rich to become rich at all--thereby impoverishing everyone over time. Rather, Rawls to prefer to give priority to those who are least well-off in a way that does not eliminate the incentive for a mining company to create surpluses in the first place.

At a practical level the pursuit of equitable distributions of mining surpluses is promoted by designing institutional arrangements that answer the following questions:<sup>31</sup>

- *What form should the allocation take?* Should governments take their mining surpluses directly in the form of cash, which they then spend on public projects? Or should governments take their surpluses less directly by requiring mining companies to build schools and hospitals or to train local workers?
- *What are the eligibility criteria?* Who is eligible to share in the surpluses of mining? Mining companies and national governments seem obvious. What about local and regional governments? Nongovernmental organizations? Anyone claiming to be an interested party to mining?
- *What counts in the distribution and what are the relevant principles?* In other words, what determines the relative priority among several eligible parties? Contributions to the project? Need? Factors that may be important in many mining situations include:
  - (a) The size of the surplus (the larger the surplus, the greater the portion that can be allocated to lower-priority claimants);
  - (b) The needs of the local community compared to those of other regions; and
  - (c) Whether a local community receives direct compensation for the environmental or social costs of mineral development or would rather share in the surpluses.
- *What are the relevant precedents?* Do allocation schemes already exist for similar cases that might provide the basis for a new scheme?
- *How should competing principles and criteria be reconciled?* In many cases an allocation scheme is likely to incorporate more than one principle – for example, a scheme allocating surpluses both according to contribution and need? How are these competing principles to be articulated, at an operational level, in the same scheme?

<sup>31</sup> Modified from Young (1994, chapter 9).

- *What incentives does a rule create?* What effect does a particular allocation scheme have on the incentives and behavior of interested parties? For example, what is the long-term effect on mineral exploration of a scheme that allocates a large share of mining surpluses to local communities rather than mining companies? Or, conversely, what is the effect on community support for mining of an allocation scheme that allocates all surpluses either to a mining company or national government?

There are no simple rules or specific distributions that will apply to all mining cases. The answers to these questions will vary from case to case. However, procedures that focus on answering these questions in a systematic way are more likely to lead to allocations that are viewed as equitable by all parties than procedures unilaterally imposed on specific situations.

## The macroeconomic and political challenge

Meeting this challenge requires that governments understand and manage the potential macroeconomic and political problems of mineral dependence, described earlier in this module.

The first set of potential problems involves *unfavourable (external) market forces*, more specifically, declining and unstable commodity prices. With regards to a decline in the level of commodity prices over the longer term:

- Governments are limited in their ability to influence prices directly.<sup>32</sup> The market for each mineral is unique. Nevertheless, many minerals are traded internationally in “competitive” markets. Economists define competitive markets as those that serve a sufficient number of sellers and buyers so that no single participant is powerful enough to influence the price.
- Producers (individually or collectively) could consider attempting to restrict output by raising prices for those minerals not traded in competitive markets, but such actions are likely to be successful only for short periods of time, if at all. To be successful over the longer term, among other things, it must be (a) difficult for new producers to enter the market to take advantage of higher prices (entry of new supply tends to weaken market power of producers) and (b) difficult for consumers to respond to higher prices by substituting away from the mineral in question.

More useful approaches for government are less direct and involve:

- Facilitating research and development aimed at reducing production costs. Profits do not have to fall, even during periods of declining prices, as long as production costs fall as well.

<sup>32</sup> The discussion here ignores the issue, identified earlier in this module, of whether in fact long-term mineral prices are falling. Informed opinion and analysis have not settled this issue.

- Funding activities aimed at stimulating demand. This type of activity can be especially important in mineral markets in which there is significant product differentiation--that is, the chemical and physical characteristics of a product vary from one producer to another. Many of the bulk minerals have a significant degree of product differentiation, such as iron ore, bauxite, and many industrial minerals.

With regard to unstable mineral prices producers should not be surprised by volatility. It is well known. Rather, producers need to consider how to manage in a volatile world:

- Several characteristics of prudent public policy that deal with fluctuating export earnings seem to be:
  - (a) Using conservative forecasts of mineral revenues because it is easier to increase spending above budgeted amounts than to cut spending below budget;
  - (b) Striving for stable growth in government spending; and
  - (c) Separating mineral revenues from other revenues and releasing them for spending at a steady rate.<sup>33</sup>
- Revenue stabilization funds are one mechanism for dealing with price instability.<sup>34</sup>
- Producers can consider using derivative-market hedges and commodity loans to stabilize realized earnings in the face of volatile prices.
- In the long-term, governments can attempt to diversify an economy away from dependence on mineral production (see Module 4), but need to be careful. Governments have a poor track record in choosing appropriate sectors in which to invest. They are likely to be more successful by taking an indirect approach--funding, for example, education, health care, provision of physical infrastructure all of which can be used by private entities in activities that will naturally lead to a more diversified economy as a nation develops.

The second set of potential problems involves *Dutch disease and internal economic stresses*. The primary issue here for governments is how to respond, if at all, to the structural changes that naturally result from an expanding, export-oriented mining industry. There are a variety of approaches:

- One option is to accept the structural changes (e.g., contraction of export-oriented agriculture) as a necessary “cost” of taking advantage of a nation’s mineral resources. A variant of this approach is to ease the transition by using some of the profits from mining to compensate those individuals hurt by structural change.

<sup>33</sup> Daniel (1992).

<sup>34</sup> See Auty and Mikesell (1998) and Mitchell, Varangis and Akiyama (1996), as well as Module 3 in this study.

- In certain circumstances, however, a government might want to slow or offset structural changes that would occur otherwise, in the following circumstances:
  - (a) If an expansion in mining is likely to be temporary;
  - (b) If the adjustment costs associated with booms and busts are large; or
  - (c) If there are significant external (or spillover) benefits to a national economy of maintaining the shrinking, non-mining sectors.

In these cases, a government might intervene in foreign exchange markets to nullify the appreciation of a national currency that otherwise hurts the international competitiveness of non-mining exporters. A government might intervene in labour markets to limit wage increases in the expanding mineral sector to limit movement of labour to that sector. There are dangers of approach, where an economy becomes less flexible in adjusting to changing economic circumstances and, as a result, becomes prone to lower rates of economic growth over the long-term.

The third set of potential problems involves *political issues* – how to minimize or avoid the rent-seeking behaviour and corruption that often accompany mineral dependence. A comprehensive review of these issues organized around a series of case studies recommends focusing on building better institutions in government, private companies, and civil society:<sup>35</sup>

- Rely on private (non-governmental) exploitation of natural resources, regulated by government. Private entities are more likely to manage production efficiently than government entities. Private entities also are more likely to be open to public scrutiny than government agencies.
- Restructure government institutions and rules to simplify and clarify mandates and jurisdictions of agencies and policies, use the central budget to clarify priorities, and reform arrangements between government agencies and state-owned companies.
- Use civil society to serve as ombudsmen (watchdogs) keeping an eye open for government mismanagement of mineral resources. Civil society can be thought of as all interested parties to mineral development other than governments and private companies (e.g., mining firms and financial institutions). Civil society encompasses, among others, community groups, religious organizations, labour unions, advocacy groups, and philanthropic organizations. As Ascher notes (pp. 278-279), “there is great virtue in a sceptical public that is intolerant of special subsidies, suspicious of government accounting, grandiose policy claims, ambiguous mandates and rosy optimism.”

<sup>35</sup> Ascher (1999).

## The investment challenge

Sustaining the broader benefits of mining even after a mine closes requires that depletable mineral resources be converted into sustainable assets. The critical issues and questions are:

*How much to save and invest?* There are two critical issues in addressing this question. First, what is the investment goal – to sustain the current level of well-being, or to sustain growth in the level of well-being? The more ambitious goal, growth, requires a higher rate of saving than the less-ambitious goal of sustainability. Second, what is the rate of return on invested saving? The higher the rate of return, the lower the required saving rate.

*By whom?* Who should invest the savings identified in the answer to the question above? The private mining companies themselves are one possibility and are likely to invest in sustaining the mining operations through onsite exploration and development of reserves at existing operations and mineral activities elsewhere. Many investments, however, have benefits that are diffuse and difficult for a private investor to obtain and appropriately require government involvement. These investments include spending on physical infrastructure, education, and health care. In certain cases, so-called tri-sector partnerships involving mining companies, government, and civil society may hold promise. When governments and civil society are responsible for investment, the assets they hold are appropriately considered trusts – that is, assets held by one entity (a government agency or civil-society group today) for the benefit of another entity (for example, poor people of the current generation, or future generations more broadly).

*In what?* The critical issue here is whether to invest in assets earning a financial return or assets with less-visible, less-financial returns. Assets in the first category include commercial enterprises, real estate, and financial assets (e.g., stocks and bonds). Assets in the second category include the public goods identified above such as physical infrastructure, education, and health care. Investment in both categories of assets is important.

- Private companies will focus on investments in the first category.
- Government agencies and civil-society groups charged with investing responsibilities have a much more difficult choice. One approach is to invest mineral revenues in financial assets, which earn income that, in turn, can be spent or re-invested. If the principal remains intact, the mineral wealth has been sustained. A number of examples exist of trust funds set up to benefit people today as well as future generations that invest only in financial assets. The best known is probably the Alaska Permanent Fund, based on oil and gas revenues.
- The other approach for governments and civil-society groups is to invest in public goods, which are likely to be underprovided by the private sector alone and yet provide the basis for well-functioning commercial activities (as identified earlier, for example, infrastructure, education, and

health care). One difficulty in making appropriate investments in public goods is that their investment attractiveness or worthiness is difficult to evaluate precisely because of the *publicness* of the activity in that returns are difficult to measure, diffuse, are indirect, and typically far in the future. Public investments are prone to manipulation by special interest groups, friends and relatives of the president, among others. The challenge in evaluating public projects is to develop mechanisms that ensure systematic and objective evaluation of projects in a manner that ensures that the process is open to public scrutiny and participation.

- It is normally not a good idea for governments to invest in directly productive activities. One study notes:

The historical evidence suggests that directly productive investment to diversify the economy is best achieved by the private sector (with minimal subsidies, if any). rather than, as was fashionable in the 1970s, by the public sector. Only if there are strong externalities, as with education and infrastructure, can a clear case be made for public investment. Government intervention to force the pace of industrialization via an active industrial policy is even less likely to be efficient. The rents conferred on infant industries invariably lead to 'policy capture' by which groups (workers, executives, and nationalistic technocrats) that benefit from state intervention build a coalition which blocks withdrawal of the rents [or subsidies].<sup>36</sup>

*Where?* The final issue is where investment should occur. The obvious options are: (a) in the mining community or region, (b) somewhere else in the national economy, or (c) abroad. If the goal is simply earning the highest rate of return on financial assets, then the choice is simple: invest in that portfolio of assets yielding the highest return, consistent with the investor's risk preferences. In practice, especially for governments and civil-society groups, the issue is more complicated. Three issues to consider:<sup>37</sup>

- *The size of the economy.* The larger the economy, the more likely it is that productive investments occur within it.
- *The level of economic development in the economy.* The lower the level of development, the larger the needs for and returns to domestic investment in physical infrastructure, education, and health care. On the other hand, and making the situation of poor countries more difficult, the lower the level of development, the less developed financial institutions and the lower the capacity for domestic investment are likely to be.
- *The degree of mineral dependence.* The more dependent an economy is on mineral production and exports, the more urgent the need to invest domestically in those activities that will facilitate diversification of the economy, especially over the longer-term.

<sup>36</sup> Auty and Mikesell (1998, p. 104).

<sup>37</sup> Hannesson (2001, p. 43).

## SUGGESTED READINGS

As noted above, this module draws heavily on a longer document by Eggert (2001), to which interested readers are referred. For more detailed discussion on specific issues in this module, see the references cited in the relevant section of the module text. In addition, for a broad overview of issues related to mining activities and sustainable development, see Otto and Cordes (2002) and the International Institute for Environment and Development and World Business Council for Sustainable Development (2002). For broader discussions on the role of institutions in promoting economic development and eliminating poverty, see World Bank (2002a). For an examination of the role of government in developing countries, see World Bank (1997). For an overview of mineral law and policy, see Otto and Cordes (2001). Three leading professional journals in the area of minerals economics and policy are:

CEPMLP Internet Journal (<http://www.dundee.ac.uk/cepmlp/journal/>),

Minerals and Energy—Raw Materials Report, and Resources Policy (<http://elsevier.nl/inca/publications/store/3/0/4/6/7/index.htm>).

## SUGGESTED INSTITUTIONAL CONTACTS

Centre for Energy, Petroleum, and Mineral Law and Policy, University of Dundee, Scotland (<http://www.dundee.ac.uk/cepmlp/>). The Centre runs interdisciplinary graduate programs and periodic training programs.

Colorado School of Mines, Division of Economics and Business, and the Institute for Global Resources Policy and Management (<http://www.econbus.mines.edu/>). The Division of Economics and Business runs graduate programs and conducts research in mineral economics and public policy. The Institute carries out research and provides advisory services related to mineral law and policy.

Mineral Economics and Management Society, an international professional society that organizes an annual conference on issues of mineral economics and policy (<http://www.minecon.com/>). The organization's website contains a useful set of links to professional and government organizations in North America.

Mineral Resources Forum, internet forum for news and links organized by the United National Conference on Trade and Development and the United Nations Environment Programme (<http://natural-resources.org/minerals/index.htm>).

Natural Resources Weblinks, a useful set of weblinks maintained by the Natural Resources and Environmental Law Program, University of Denver (<http://law.du.edu/naturalresources/>).

World Bank Mining Group  
(<http://worldbank.org/html/fpd/mining/index.htm/>).

## REFERENCES

- Ascher, W., 1999. *Why Governments Waste Natural Resources: Policy Failures in Developing Countries*. Johns Hopkins University Press, Baltimore.
- Auty, R. M., and Mikesell, R. F., 1998. *Sustainable Development in the Mineral Economies*. Clarendon Press, Oxford.
- Baldwin, R. E., 1966. *Economic Development and Export Growth: A Study of Northern Rhodesia, 1920-1960*. University of California Press, Berkeley.
- Daniel, P., 1992. "Economic Policy in the Mineral-Exporting Countries: What Have We Learned?" In: *Mineral Wealth and Economic Development*, edited by J. E. Tilton. Resources for the Future, Washington, DC.
- Davis, G., 1998. "The minerals sector, sectoral analysis, and economic development". *Resources Policy*, vol. 24, no. 4, pp. 217-228.
- Davis, G., and Tilton, J., 2002. "Should Developing Countries Renounce Mining? A Perspective on the Debate". Submission to the Extractive Industries Review (<http://www.eireview.org/>, accessed April 27, 2003).
- De Ferranti, G., Perry, G. E., Lederman, D., and Maloney, W. F., 2002. "From Natural Resources to the Knowledge Economy: Trade and Job Quality". World Bank, Washington, DC.
- Dehn, J., and Gilbert, C. L., 1999. "Commodity Price Uncertainty and Economic Growth and Poverty". Unpublished study cited in *Global Economic Prospects and the Developing Countries*, 2000. World Bank, Washington, DC.
- Eggert, R. G., 2001. "Mining and Economic Sustainability: National Economies and Local Communities". Background study prepared for the Mining, Minerals, and Sustainable Development Project, London. Available on the CD-ROM accompanying *Breaking New Ground: Mining, Minerals and Sustainable Development*, published by Earthscan, London, for the International Institute for Environment and Development and World Business Council for Sustainable Development, 2002.
- Friends of the Earth International, 2000. "Phasing Out Public Financing for Fossil Fuel and Mining Projects". Position paper, September (<http://www.foe.org/international/>, accessed October 30, 2001).
- Hanneson, R., 2001. *Investing for Sustainability: The Management of Mineral Wealth*. Kluwer Academic Publishers, Boston.
- Hirschman, A. O., 1958. *The Strategy for Economic Development*. Yale University Press, New Haven, Connecticut.
- International Institute for Environment and Development and World Business Council for Sustainable Development, 2002. *Breaking New Ground: Mining, Minerals, and Sustainable Development*. Earthscan Publications, London.

- Intriligator, M. D., 2003. "Globalization of the World Economy: Potential Benefits and Costs and a Net Assessment", Milken Institute Policy Brief no. 33 (<http://www.milkeninstitute.org/>, accessed March 26, 2003).
- Karl, T. L., 1997. *The Paradox of Plenty: Oil Booms and Petro-States*. University of California Press, Berkeley.
- Kremers, J. J. M., 1986. *The Dutch Disease in the Netherlands*. In: *Natural Resources and the Macroeconomy*, edited by J. P. Neary and S. Van Vijnbergen, pp. 96-136. MIT Press, Cambridge, Massachusetts.
- Kunte, A., Hamilton, K., Dixon, J., and Clemens, M., 1998. "Estimating National Wealth: Methodology and Results." Environmental Economics Series. World Bank, Washington, DC.
- Lederman, D., and Maloney, W., 2002. "Open Questions About the Link Between Natural Resources and Economic Growth: Sachs and Warner Revisited". World Bank working paper, January.
- Mahon, J. E., Jr., 1992. "Was Latin America Too Rich to Prosper? Structural and Political Obstacles to Export-led Growth". *Journal of Development Studies*, vol. 28, no. 2, January, pp. 241-263.
- McMahon, G., and Remy, F., editors, 2001. "Large Mines and the Community: Socioeconomic and Environmental Effects in Latin America, Canada, and Spain". World Bank, Washington, DC., and International Development Research Centre, Ottawa.
- Mitchell, D., Varangis, P., and Akiyama, T., 1996. "Managing Commodity Booms and Busts". World Bank, Washington, DC.
- Otto, J., and Cordes, J., editors, 2000. "Sustainable Development and the Future of Mineral Investment". United Nations Environment Programme, Paris.
- Otto, J., and Cordes, J., 2001. "The Regulation of Mineral Enterprises: A Global Perspective on Law and Policy". Rocky Mountain Mineral Law Foundation, Denver.
- Prebisch, R., 1950. "The Economic Development of Latin America". United Nations, New York.
- Ross, M., 2001. "Extractive Sectors and the Poor. An Oxfam America Report" (<http://www.oxfamamerica.org/>, accessed October 29, 2001).
- Sachs, J. D., and Warner, A. M., 1995. "Natural Resource Abundance and Economic Growth". NBER Working Paper 5398. Cambridge, Massachusetts, National Bureau of Economic Research.
- Sachs, J. D., and Warner, A. M., 1997a. "Natural Resource Abundance and Economic Growth". HIID Working Paper, November.
- Sachs, J. D., and Warner, A. M., 1997b. "Sources of slow growth in African economies". *Journal of African Economies*, vol. 6, no. 3, pp. 335-376.

- Sachs, J. D., and Warner, A. M., 1999a. "Natural Resource Intensity and Economic Growth". In: *Development Policies in Natural Resource Economies*, edited by J. Mayer, B. Chambers, and A. Farooq, editors, pp. 13-38. Edward Elgar, Cheltenham, UK, in association with UNCTAD.
- Sachs, J. D., and Warner, A. M., 1999b. "The big push, natural resource booms and growth". *Journal of Development Economics*, vol. 59, pp. 43-76.
- Sachs, J. D., and Warner, A. M., 2001. "Natural resources and economic development: the curse of natural resources". *European Economic Review*, vol. 45, pp. 827-838.
- Sala-i-martin, X., 1997. "I just ran two million regressions". *American Economic Review*, vol. 87, no. 2, pp. 178-83.
- Seers, D., 1959. "An Approach to the Short Period Analysis of Primary Producing Economies". Oxford Economic Papers, February issue.
- Singer, H. W., 1950. "The Distribution of Gains Between Investing and Borrowing Countries". *American Economic Review, Papers and Proceedings*, vol. 40, pp. 473-485.
- Snider, L. W., 1996. *Growth, Debt, and Politics: Economic Adjustment and the Political Performance of Developing Countries*. Westview Press, Boulder, Colorado.
- Taylor, T., 2002. "The Truth About Globalization". *The Public Interest*, issue 147, pp. 24-44.
- United Nations Development Programme, 2002. Human Development Report 2002. Oxford University Press, New York.
- Weber-Fahr, M., 2002. "Treasure or Trouble? Mining in Developing Countries". Paper published by the Mining Department, World Bank, Washington, DC.
- World Bank, 1997. *World Development Report 1997: The State in a Changing World*. Oxford University Press, New York.
- World Bank, 2000. "Managing the Recent Commodity Price Cycle. In: Global Economic Prospects and the Developing Countries", pp. 103-132. World Bank, Washington, DC.
- World Bank, 2002a. World Development Report 2002: *Building Institutions for Markets*. Oxford University Press, New York.
- World Bank, 2002b. World Development Indicators 2002. World Bank, Washington, DC.
- World Bank and Metal Mining Agency of Japan, 2001. *Review of Legal and Fiscal Frameworks for Exploration and Mining*. Mining Journal Books, London.
- Young, P., 1994. *Equity: In Theory and Practice*. Princeton University Press, Princeton, New Jersey.



## **MODULE 2**

### **INTERNATIONAL LAW, NATIONAL SOVEREIGNTY AND ACCESS RIGHTS IN RELATION TO MINERAL RESOURCES**



## SUMMARY

International law and many national legal systems regulate the grant and exercise of mineral rights. International law is now influenced by a broad variety of actors and fora. From a focus on investment protection and, more recently, environmental protection, the scope of international law applicable to mineral operations has expanded under the framework of laws relating to sustainable development. Apart from States, companies and other non-state actors are increasingly subject to its regulation. Issues relating to the rights of communities affected by mining have become an important aspect of that law. These developments influence national legal systems.

International dispute-settlement institutions depend for their jurisdiction on the parties submitting a case. Thus, international enforcement mechanisms are more rudimentary than national judicial machinery. Yet often, the latter has to enforce international law norms. Institutions without coercive power are, nonetheless, making an impact on the conduct of States, companies and others. Disputes involving access rights to minerals may come before a variety of international and national institutions. Many institutions are usually involved at the national level in the formulation and implementation of policy regarding the ownership of minerals and the licensing and conduct of mineral operations.

## INTRODUCTION

Mining is in many respects an international industry. A deposit located in one country is often mined by a company whose home base is elsewhere. Funding for the mineral operation may be mobilized from a variety of sources. The mineral itself may be exported, refined and sold in countries other than that in which the deposit was extracted. It is thus not surprising that a number of different legal systems may have a claim to relevance to issues arising out of mineral operations. The involvement of multinational corporations in the industry and the manner in which they integrate their activities make it even more vital to keep in mind the possibility that rules from different legal systems will apply to the same operation.

Governments are significant actors in the mining industry. In many countries the State is the resource owner. Governments also regulate many aspects of the industry; they are the taxing authority and they are protectors of the interests of their citizens – individual and corporate – particularly when these are in another country. International law, whose primary area of operation has traditionally been in the regulation of the conduct of States, therefore has a place in a regime applicable to the industry. In response to increasing concern by influential groups that multinational corporations may take unfair advantage of weaknesses in the legal systems of developing countries to the detriment of vulnerable elements in society, the application of internationally recognized standards to their activities has become a significant feature of the regulatory regime.

## I. INTERNATIONAL LAW AND NATIONAL SOVEREIGNTY

### National sovereignty

International law is premised on the recognition of each State as sovereign and equal. Sovereignty implies that its governmental authorities have the power to make decisions on matters within the State's competence independent of external control. Matters on which the State has such competence are said to be within its "domestic jurisdiction". The scope of the domestic jurisdiction is itself a matter of international law. In other words, the international legal system prescribes for a State areas of freedom of action as well as controls on what it is permitted to do.

### States and the making of international law

#### Treaties

States are not only bound by international law; they also make it. They do so in a number of ways. The most explicit method is by entering into treaties. A treaty is an agreement between States or involving organizations created by them. There are several synonyms for the word "treaty". The following are examples of treaties: the United Nations Charter, the Articles of Agreement of the International Monetary Fund (IMF), the Convention on Settlement of Investment Disputes between States and Nationals of other States (ICSID) and the Constitutive Act of the African Union.

Some international organizations are vested with law-making powers by the treaties creating them. One of the best-known examples of this is the European Union (EU), whose institutions issue directives and regulations that have the force of law within member countries. The International Seabed Authority (ISA), established under the UN Convention on the Law of the Sea (UNCLOS), is empowered to make regulations for deep seabed mining. In July 2000, it issued

its first set of regulations, on Prospecting and Exploration for Polymetallic Nodules in the Area (i.e. the international seabed).<sup>1</sup> These are particular instances. There is, however, no international legislature vested with general law-making powers for the international community. Nonetheless, international governmental organizations, such as the UN, often facilitate the negotiation of multilateral treaties to which States are parties. UNCLOS is a notable example.

## Customary international law

International law norms are also distilled from the repeated conduct of States where there is evidence that such conduct is consistent, widespread and based on a sense of obligation. A rule thus identified is described as one of customary law. Whether or not a rule of customary international law has emerged in any particular instance may be subject to a great deal of controversy. In a world of more than 190 States, whose conduct, and over what period, is sufficient to distill evidence of consistent and general State practice? Is active conduct required or is silence in the face of other States' conduct sufficient? How can one tell that a course of conduct is prompted by a sense of legal obligation rather than by considerations of prudence, expediency or courtesy? These are questions that have to be considered in determining whether a rule exists as customary law. International lawyers disagree in specific instances. Nonetheless, they agree that States can make laws in this form.

## General principles of law

Rules of international law may also be derived from national or municipal legal systems. This is said to involve the application of “general principles of law recognized by civilized nations”, to use the words of the Statute of the International Court of Justice. The approach is to identify common or similar principles which can be found in a variety of national legal systems and to formulate, where appropriate, analogous ones for the international legal order.

There is currently some discussion as to whether a general principle of international law has emerged which imposes an obligation on States to require that environmental impact assessments (EIAs) be conducted prior to giving approval for certain types of projects. The fact that EIAs are now obligatory in many countries gives plausibility to the issue to which we shall return in Section II. Other examples of general principles range from broad statements – such as that “binding agreements are to be respected” and that “breach of a legal right requires the making of reparation,” to specific rules of evidence such as those protecting confidential communications between lawyers and their clients and, in some

<sup>1</sup> See Lodge (2002)

cases, confidential information obtained by journalists. The legal material from national systems on which a general principle can be founded may also provide evidence that a rule of customary international law has emerged.

## The relationship between national law and international law

Questions arise on how municipal and international law relate to each other. The constitutional and administrative law of each country indicates who has the power to negotiate, sign or ratify a treaty and what is required to bring its provisions into effect within the national legal system. In some countries the executive negotiates and signs the treaty, while Parliament ratifies it. In others, different agencies of the executive negotiate and sign while the head of state ratifies. In some countries a treaty comes into force and can be applied by courts and other officials when the processes of ratification have been effected. A further act of the legislature - such as an Act of Parliament - is required to incorporate the treaty provisions in others. A State may be bound by a treaty even though steps required to incorporate its provisions into the national legal system have not been taken. Failure to fulfill its obligations would then constitute a violation of international law. Its internal legal processes would not constitute an excuse.

Most countries take the position that rules of customary international law are applicable as part of the municipal legal order, except in the event that a legislative provision overrides such a rule. Here again, though the legislation would be binding on courts and other officials of the country, it would not excuse the State from liability for breach of international law.

## Soft law

Treaties, customary law and general principles are the traditionally accepted methods by which international law is made. Within the last thirty years, there has been increasing acknowledgement of “soft law”, or “non-binding norms”, as a phenomenon in the development of international law. These expressions refer to standards articulated in a variety of instruments whose authority has not attained the status of the more traditional sources of international law.

UN Conferences have provided fora for States, international governmental organizations, expert groups and non-governmental organizations (NGOs) to consider problems of significance to the international community. Such conferences have produced resolutions and declarations setting out issues of concern, statements of relevant principles, broad goals or targets to be achieved or towards which conduct should be directed and programmes of action for their implementation. International financial institutions such as the World Bank have also, often in response to criticisms from activist groups, formulated guidelines and policies for social conduct or environmental practice to regulate their decision-making processes as well as the requirements they demand of borrowers in respect of projects to which they lend. Other intergovernmental organizations, industry

groups, expert bodies and standards organizations also have voluntary codes of conduct and recommend operating procedures or standards to which relevant actors are invited to subscribe.

The best known UN Conferences associated with the generation of “soft law” are the Stockholm Conference on the Human Environment (UNCHE) held in June 1972, the Rio de Janeiro Conference on Environment and Development (UNCED) held in June 1992 and, recently, the World Summit on Sustainable Development (WSSD) held in Johannesburg from 26 August - 4 September 2002.

The conferences and institutions that have been established in response to them, such as the United Nations Environmental Programme (UNEP) and the Commission on Sustainable Development (CSD) have been influential in the development of law and policy regarding human rights and the environment.

The World Bank Guidelines on Involuntary Resettlement in Development Projects, the Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises, the International Cyanide Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (sponsored by UNEP and the International Council on Metals and the Environment (ICME), now the International Council on Minerals and Metals (ICMM)) and the International Organization for Standardization (ISO) 14000 series (regarding environmental management systems) are all instances of soft law instruments.

The declarations from conferences record the consensus achieved in respect of particular issues. They may encourage a greater focus on the development of norms regarding those issues and provide a platform on which subsequent efforts can be built. Guidelines, voluntary codes, recommended standards and procedures often become benchmarks of acceptable practice against which performance of both those who adopt them and those who do not is measured. Applicable guidelines are taken into account by international financial institutions in their evaluation of projects. What starts out as “soft law” is sometimes converted into treaty provisions or else may be adopted by enough States to form the basis for the development of a rule of customary international law or of a general principle of law.

## Permanent sovereignty over natural resources

Since 1952, the United Nations General Assembly (UNGA) has been a focal point for the development of the doctrine of permanent sovereignty over natural resources and for debates on its content and status.

Its principal advocates were countries in Latin America, Asia and Africa who were concerned with asserting a power to terminate or vary, without incurring liability or reprisals, arrangements under which companies from the U.S. and Europe had rights to Third World mineral or other natural resources. They sought to articulate principles emphasizing that the regulation of natural resources was within the

domestic jurisdiction of the State in which the resource was located. In response the U.S. and most European countries invoked or proposed principles relating to state succession to treaties, the treatment of aliens and the protection of their property as qualifications on the scope of the domestic jurisdiction.

Resolution 1803 (XVII), adopted by the General Assembly on 19 December 1962, perhaps best reflects the closest to a consensus ever achieved in that debate. Its terms illustrate the challenge of defining in a manner acceptable to different constituencies, within the international community, on a controversial issue the scope of the domestic jurisdiction as well as other applicable principles of international law.

Recently, the doctrine has been invoked in the context of the rights of the people of the Democratic Republic of the Congo in the face of the exploitation of their mineral resources by various armed groups fighting with or against its Government.<sup>2</sup>

Permanent sovereignty is increasingly being considered in the context of debates regarding environmental protection and the sustainable development of natural resources. The issue there is as to whether there are or should be obligations imposed by international law on state authorities in relation to management of resources located within the country.<sup>3</sup>

## Summary

- International law regulates state conduct;
- International law consists of:
  - Treaties
  - Customary law
  - General principles and, recently,
  - Soft law
- States create international law;
- Some intergovernmental organizations also create law;
- Others facilitate lawmaking by states;
- National legal systems usually include international law; and
- Permanent sovereignty over natural resources is both acknowledged and regulated by international law.

<sup>2</sup> European Parliament resolution on the Democratic Republic of Congo (13/6/2002).

<sup>3</sup> See Schrijver (1997).

## II. INTERNATIONAL LAW OBLIGATIONS AFFECTING MINERAL RIGHTS

### Investment protection

In customary international law, a State is free to decide what foreign investors it will permit, the areas in which they can operate and the terms on which they will be allowed in. Treaties setting up free trade areas or other economic groupings, such as the World Trade Organization (WTO) arrangements as well as various bilateral agreements impose limits on a State's right to enforce entry restrictions on investors from countries that are parties to the applicable treaty.

The central issue on which there has been a focus, however, is the protection of investments from interferences by the state.

The starkest form of interference involves taking over of assets into State ownership. There is an increasing recognition of a category of "indirect takings" or "creeping expropriation" as falling within the relevant international law rules, though its scope remains uncertain. Withdrawal of a permit required for the operation of a business, interference with its management and expulsion of the owner, thereby making it difficult to run the business, are instances of governmental acts capable of constituting an indirect taking.

The extent to which changes in a country's regulatory regime or in the application of an existing regime can amount to expropriation is subject to greater debate. If a revision of a country's environmental laws imposes significant additional burdens on a project, could that amount to an indirect taking of the business? Under what circumstances may a rezoning of property be held to constitute expropriation? Treaty provisions as well as the terms of agreements between countries and investors have had a bearing on the answer to the scope of the prohibition on indirect takings.<sup>4</sup>

<sup>4</sup> See Sornarajah (1994), Sornarajah (2000), UNCTAD (2000) and United Mexican State vrs. Metalclad Corporation. 16(1) ICSID Review – Foreign Investment Law Journal, [www.worldbank.org/icsid/cases/htm](http://www.worldbank.org/icsid/cases/htm)

The standard formulation is that the taking of property, to be lawful under international law, must be for a public purpose and that compensation is payable to the owner. Western countries have insisted on “prompt, adequate and effective” compensation as the measure of the obligation on the expropriating State. Developing countries have advocated a looser criterion, namely “appropriate” compensation. Here again the matter is often resolved by particular treaty provisions.

Investment protection treaties also often contain provisions prohibiting discrimination against nationals of the parties in each other’s jurisdiction. Some require equal treatment with nationals of the host State. Others require that the most favourable treatment that is accorded to other foreign business at any time be applied to nationals of the treaty parties. Clearly, there are significant policy implications to such provisions and it is not always developing countries alone that are reluctant to submit to them without qualification.

## Environmental protection

In the words of the International Court of Justice, “the existence of the general obligation of States to ensure that activities within their jurisdictions and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment”.<sup>5</sup> The “environment”, the Court stated, “is not an abstraction but represents the living space, the quality of life and the very health of human beings”.<sup>6</sup> The Court was thus expressing an aspect of a basic rule of customary international law to the effect that a State must not use or permit its territory to be used in a manner that causes injury to another State or to persons or property therein.

These rules have been applied to hold Canada liable for damage caused to the property and health of persons in the U.S. respectively from emissions from an aluminium smelter and from overflowing arising from the building of a dam.<sup>7</sup> The release of an estimated 50 to 100 tones of cyanide into the Danube River catchment area as a result of a breach in a mining tailings dam in Baia Mare, Romania, at the end of January 2000 is a graphic illustration of their potential relevance in the context of mining operations (box 2.1).

Opinion is divided as to whether liability arises from or is irrespective of negligence by the State. The answer sometimes turns on the interpretation of particular treaty provisions.

<sup>5</sup> International Court of Justice Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons 35(4) ILM pp 814- 938, paragraph 29. <http://www.icj-cij.org/icjwww/idecisions.htm>

<sup>6</sup> Ibid.

<sup>7</sup> The Trail Smelter Arbitration (1939) 33 AJIL (1939), 182 & 35 AJIL (1941), 684; The Gut Dam Arbitration 8 ILM (1968), 118; see more recently the Gabčíkovo-Nagymaros Project (Hungary/Slovakia) International Court of Justice. Judgment No 92 of 1997. <http://www.icj-cij.org/icjwww/idecisions.htm>

## Box 2.1

## CYANIDE SPILL IN BAIJA MARE, ROMANIA, JANUARY 2000

UNEP/OCHA Report [www.mineralresourcesforum.org/incidents/BaiaMare](http://www.mineralresourcesforum.org/incidents/BaiaMare)

On January 30, 2000, a tailings dam operated by Aurul, a joint venture company owned by a Romanian enterprise and Esmeralda Exploration Limited of Australia, overflowed, causing the release of about 100,000 cubic metres of a solution containing cyanide. Spillage from the dam was eventually stopped on 2 February 2000. The solution travelled through many watercourses and went as far as the Black Sea, traversing the territories of Romania, Hungary and Yugoslavia. It was reported that about 2000 kilometres of the Danube River catchment area were affected. A team of experts who investigated the incident under the auspices of the United Nations Environment Programme (UNEP) and the UN Office for the Coordination of Humanitarian Affairs (OCHA) issued a report in March 2000 concluding that:

- The overflow of the dam was foreseeable and was caused by a combination of factors including weaknesses in design;
- The monitoring and contingency planning at the site, though not in violation of local law, was rudimentary; and
- There were deficiencies in the early warning mechanisms used, particularly in relation to giving notice to the local population.

In the context of projects involving significant risk of environmental effects beyond national boundaries, States have a duty at least to notify others who might be adversely affected before initiating them, to take their views into account and to negotiate with them in good faith in relation to any concerns or objections raised. It has further been proposed that there is a duty on a State in which such a project is to be initiated to conduct an environmental impact assessment as part of its obligation of cooperation with other States. The duty, as it has been put by Birnie (2002), “is not merely to notify what is known but to know what needs to be notified”.<sup>8</sup>

Apart from these customary laws and general principles, many bilateral and multilateral treaties impose a variety of environmental obligations with implications for mining. These are extensively discussed by Pring (1999). In summary, they include provisions:

- Protecting designated cultural and nature sites which may limit or prohibit mining operations therein;
- Requiring environmental impact assessments prior to permitting certain types of projects whether or not they could have transboundary effects;
- Regulating discharges into water or emissions into the atmosphere; or
- Restricting or banning trade in hazardous or other anti-environmental products.

<sup>8</sup> p. 133.

In this area there is a good deal of influence of soft law instruments, particularly from financial institutions. Loan or investment insurance agreements contain covenants aimed at promoting compliance with institutional guidelines regarding environmental protection. Non-compliance would thus constitute a default by the borrower or the insured.

## Respect for human rights

Human rights norms constitute an area in which international law imposes extensive regulation on the domestic jurisdiction of States. Respect for traditional civil and political rights, as well as of economic, social and cultural rights of individuals and groups of persons, is required of States and other actors.

The International Covenant on Civil and Political Rights (ICCPR), to which more than 149 States are parties, provides that each State party “undertakes to take the necessary steps ... to adopt such legislative or other measures as may be necessary to give effect to the rights recognized in the .... Covenant”.<sup>9</sup> These include the rights to life, liberty and security of the person, freedom of expression, movement, peaceful assembly and association, as well as to protection from torture, slavery, servitude and forced or compulsory labour.

The International Covenant on Economic, Social and Cultural Rights (ICESCR) articulates standards to whose progressive realization, at the very least, the parties commit themselves. The right to work, to social security, an adequate standard of living for persons and their family, and to physical and mental health and education are instances. There are also provisions regarding the right to fair and equal pay for equal work, to safe and healthy working conditions and to form and join trade unions.

A number of the rights in the two Covenants are further elaborated by Conventions entered into under the auspices of the International Labour Organization (ILO).

In this area, not only is there substantial regulation of State conduct; individuals and groups of persons are allowed a more active role in the enforcement process than is the case in many other areas of international law. Besides, as is quite dramatically illustrated by the proceedings of the International Criminal Tribunals for Yugoslavia and Rwanda and in the compensation claims brought against companies for alleged complicity in holocaust activities, individuals and other non-State actors are increasingly being held liable for participation or collusion in the grossest violations of human rights.

<sup>9</sup> Article 2.2.

## Summary

- International law prohibits the taking of foreign property without compensation;
- What amount to a “taking” is not completely settled;
- There are competing standards regarding appropriate compensation;
- Discrimination against non-citizens is often prohibited by treaty provisions;
- A State may be liable for injury caused in a neighbouring State by activities within its borders;
- The duty of States to cooperate with each other may require environmental assessment of certain proposed activities;
- States, individuals and corporate bodies may be liable for human rights violations.

### III. INTERNATIONAL ADJUDICATING INSTITUTIONS

International law norms are frequently applied in proceedings before national institutions, courts, arbitrators, human rights commissions, and so on. These national institutions are discussed in section VII. A selection of internationally-created bodies which apply, develop or enforce international law in the course of dispute resolution by judicial or similar means is presented below.

#### The International Court of Justice

The Statute of the International Court of Justice (ICJ), which is the treaty setting out its organization, composition and powers, describes its function as being “to decide in accordance with international law such disputes as are submitted to it”.<sup>10</sup> The UN Charter provides that it is “the principal judicial organ of the UN.”<sup>11</sup> Only States can refer disputes to the Court. However, the General Assembly, the Security Council and other UN organs and specialized agencies may also request the Court to issue advisory opinions. Twenty-four such opinions have been delivered since the inception of the Court in 1946, on matters ranging from the benefits due to persons engaged by the UN, the status of South-West Africa (now Namibia) and Western Sahara, to the legality of the threat or use of nuclear weapons.<sup>12</sup>

States are not required to submit disputes to the ICJ. They can choose to resort to other tribunals. The jurisdiction of the Court is based on the agreement of the parties to refer a matter to it. This may be done when a dispute arises. Article 36 of the Statute of the Court provides that a state may make a declaration submitting to its jurisdiction on the range of matters specified therein. Such submissions may be unconditional, conditional on reciprocity or for a particular period. Thus, each state determines the extent of the Court’s jurisdiction over it. States have made declarations with a variety of limitations and conditions, including such as that matters within their domestic jurisdiction (in some instances as determined by them) are not to be adjudicated upon by the Court.

<sup>10</sup> Article 38.1.

<sup>11</sup> Article 92.

<sup>12</sup> [www.icj-cij.org/icjwww/igeneralinformation/icjgnnot.html](http://www.icj-cij.org/icjwww/igeneralinformation/icjgnnot.html)

The Charter requires states to comply with decisions of the Court in cases to which they are parties. The Security Council is empowered to make recommendations or decide upon measures to be taken to give effect to a judgment of the Court where a party refuses to respect it.<sup>13</sup> There have been occasions when states have refused to comply with decisions of the Court. However, many considerations usually lead them to respect those decisions.

The case concerning the Land and Maritime Boundary between Cameroon and Nigeria, in which a decision was delivered on 10 October 2002,<sup>14</sup> is an example of the exercise of the Court's jurisdiction in a dispute between states arising from differences over access rights to petroleum resources. The outcome of Nigeria's announcement<sup>15</sup> that it will not respect the decision of the Court remains to be seen.

## The Permanent Court of Arbitration

In arbitration proceedings, unlike the normal court process, parties have the opportunity to choose their own arbitrator(s). They may agree to select an arbitrator or arbitrators ad hoc, when a dispute arises, or else identify an institution under whose auspices an arbitration would be conducted. In ad hoc arbitration, the arbitrator determines the rules of procedure to be adopted unless the parties have agreed on what should apply. Institutions, on the other hand, have rules that regulate the conduct of arbitrations held under their auspices.

Arbitration offers parties the opportunity of resolving disputes outside the court process, which may be useful for a variety of reasons. The parties may be looking for a neutral or a more expeditious forum than a national court. Proceedings are often almost as formal as those in court.

Many institutions that provide arbitration facilities also offer opportunities for conciliation. While an arbitrator's award is binding on the parties, conciliation allows a third party to make proposals to the disputants as to how to resolve their differences.

The Permanent Court of Arbitration (PCA) was established pursuant to a conference convened at the Hague in 1899 to promote the peaceful settlement of international disputes. The PCA started operating in 1913. It provides a facility for arbitration and other means for dispute resolution outside established court processes.

It has a list of arbitrators from whom parties may select in establishing an arbitration tribunal. It has rules that can be adopted to guide the course of proceedings.

<sup>13</sup> Article 94.2.

<sup>14</sup> Case Concerning the Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v Nigeria: Equatorial Guinea intervening) International Court of Justice Judgment No. 94 of 2002. [www.icj-cij.org/ICJWWW/IDecisions.htm](http://www.icj-cij.org/ICJWWW/IDecisions.htm)

<sup>15</sup> See "Government Rejects World Court Verdict on Bakassi" by Charles Ozoemena, [www.allafrica.com/stories/200210240629.html](http://www.allafrica.com/stories/200210240629.html) ; "Nigeria, Cameroon agree to December 1 Meeting on Oil Dispute," United Nations, [www.allafrica.com/stories/200211160084.html](http://www.allafrica.com/stories/200211160084.html)

Its Secretariat, called the International Bureau, is available to serve as a registry to administer proceedings, receiving documents, facilitating communications between the parties as well as with the tribunal and, generally, providing logistical and technical support. Its Secretary-General also serves as the appointing authority of last resort, if so designated in an agreement for ad hoc arbitration, to select an arbitrator where the parties cannot agree on their choice. The rules on international commercial arbitration adopted in 1976 by the United Nations Commission on International Trade Law (UNCITRAL) so designate the Secretary-General of the PCA.

From a focus on disputes between States, the rules of PCA have been modified over time to permit arbitration between States and others. In 2001, it adopted a set of Optional Rules for Arbitration of Disputes Relating to Natural Resources and/or the Environment. These are available for use in disputes to which at least one party is not a State.

## The International Centre for the Settlement of Investment Disputes

The International Centre for the Settlement of Investment Disputes (ICSID) was established in 1966 pursuant to the Convention on the Settlement of Investment Disputes between States and Nationals of other States. The Convention, which was sponsored by the World Bank, had 153 States as signatories as of 16 September 2002, 136 of which had ratified it. Its Secretariat is located in the World Bank premises in Washington DC, though proceedings under its auspices can be and are sometimes held elsewhere.

Each party to the Convention is permitted to nominate four persons to a list or Panel of Arbitrators and four to a Panel of Conciliators maintained by the Centre. Normally, an ICSID arbitration tribunal is composed of persons on the arbitration list. ICSID serves as the appointing authority in default of agreement by the parties to a dispute. Though States do not have to submit investment disputes within their jurisdiction to the Centre, the Convention requires parties to recognize and enforce awards made in an ICSID arbitration, whether or not they were involved in the proceedings leading to the award.

ICSID has introduced the Additional Facility Rules, which allow it to be used for the resolution of disputes involving States not parties to the Convention.

## The United Nations Human Rights Committee

The United Nations Human Rights Committee (UNHRC) was established pursuant to the International Covenant on Civil and Political Rights (ICCPR). It is composed of eighteen independent experts elected by the parties and meets three times a year for three-week sessions in New York (March) and in Geneva (July

and November). It considers the reports on the situation of human rights that parties to the Covenant are required to submit once every five years. The reports are examined in public hearings. Non-governmental organizations (NGOs) are encouraged to submit written reports, though they do not participate in the oral exchanges at the hearings. At the end of the session, the Committee publishes its observations on the positive aspects as well as the weaknesses in the country reports considered.

The First Optional Protocol to the Covenant, to which 102 countries are currently parties, permits individuals to make complaints to the Committee of violations of the Covenant by a State. It came into force in March 1976. A Special Rapporteur facilitates the work of the Committee by assessing the admissibility of complaints, transmitting them to the party against whom it is made for its response and deciding whether or not to ask for interim measures before the admissibility of the complaint is determined. After a final decision has been rendered, the Special Rapporteur takes follow-up steps with a view to having it accepted and implemented. There are no mechanisms for enforcing the Committee's decisions.

## The International Court of Arbitration of the International Chamber of Commerce

The International Chamber of Commerce (ICC) is an organization made up of business entities and associations from more than 130 countries. Founded in 1919, it established its International Court of Arbitration in 1923 to provide a facility for the resolution of commercial disputes. Both the ICC and the Court have their headquarters in Paris.

The Court is made up of 112 members from 73 countries. Each member is appointed for a three-year period by the General Assembly of the ICC, the World Council, upon the nomination of a national committee. Their role is not a full-time one. The quorum for its meetings is six. It meets in plenary session once a month.

The Court does not engage in arbitration, but supervises proceedings conducted under its auspices. Persons nominated as arbitrators must be confirmed by the Court, which requires that they declare their independence in relation to the exercise of their functions. Awards to be made by an arbitration tribunal must be submitted to the Court, which may lay down modifications as to the form of the Award and, without affecting the Arbitral Tribunal's liberty of decision, "may also draw its attention to points of substance."<sup>16</sup>

<sup>16</sup> Article 27, ICC Arbitration Rules

## The World Bank Inspection Panel

In 1993, the World Bank established a three-member body called the Inspection Panel to entertain and assess complaints by persons claiming that a Bank-funded project in their area is likely to cause harm to them or to persons they represent. The complainants, or Requesters (to use the language of the Panel), must also allege (1) that the Bank's own policies and procedures have not been followed in the design, appraisal or implementation of the project; and (2) that, although there have been discussions with Bank management on the matter, they have not obtained satisfaction.

Complaints from suppliers or losing tenderers against procurement decisions by borrowers are not within the area of investigation assigned to the Panel.

Members of the Panel are appointed from Bank member countries by the Board for five-year terms. The initial appointments were, however, made for periods between three and five years so as to ensure that the tenure of office of the members end in different years. Criteria set out for appointment include integrity, independence from the Bank's management and exposure to developmental issues and living conditions in developing countries. The Panel's Secretariat is located in the premises of the Bank.

If the Panel considers that a complaint, or Request, appears to be within its mandate, it sends it to the management of the Bank, which must respond within 21 days. The Panel then makes a decision (also within 21 days) as to whether to recommend an investigation to the Board. A report of that recommendation and the management's response to the Request are published within three days of the Board's decision. The Panel will conduct a full-scale investigation if the Board so decides. This may include visits to the area allegedly affected. At the end of the investigation, the Panel sends its findings and conclusions to the Board and the management. The latter has six weeks to send recommendations to the Board as to what actions the Bank should take. The Board decides what should be done. The Panel's report and management's recommendations are then published.

The Panel has so far entertained more than twenty-six requests and has dealt with allegations of violation of Bank policies on environmental assessment, involuntary resettlement, indigenous people, forestry, cultural property, pest management and dam safety. Its report on the Chad-Cameroon Pipeline Project, released on 12 September 2002, is a recent example of its work.

## Summary:

The following are examples of institutions which may handle disputes about mining rights or involving mining operations:

- The International Court of Justice
- The Permanent Court of Arbitration
- The International Centre for the Settlement of Investment Disputes
- The International Court of Arbitration of the International Chamber of Commerce
- The Human Rights Committee of the United Nations
- The World Bank Inspection Panel

### Box 2.2

The Chad-Cameroon Pipeline Project: Inspection Panel Report

The Chad-Cameroon Pipeline Project is described by the Panel as the largest energy infrastructure development on the African continent. 300 wells are to be drilled in three oilfields in the Doba region of southern Chad. A pipeline of more than 1,000 kilometres is to be constructed through Cameroon to an offshore loading facility. The estimated cost of the project, which involves Exxon Mobil, Petronas and Chevron, is \$US3.7 billion.

The requesters claimed that the project represented a threat to local communities, their cultural property and the environment. They complained about inadequacy of environmental assessment and about the compensation and resettlement schemes. They alleged that there had not been proper consultation with and disclosure of information to the local communities.

The investigation phase was conducted with the assistance of three consultants: an anthropologist and social scientist, an economist and an environmental specialist. The Panel interviewed World Bank Group staff and heard a team from ExxonMobil. It visited the project area on three occasions altogether.

The report emphasizes that the investigation focused on Bank "Management's actions and omissions" relating to the Chad portion of the project. The oil companies and the Chad government were not within its mandate.

The Panel found breaches of World Bank policies and procedures in certain respects. It cited, among others, a failure to require preparation of a regional environmental assessment plan given the nature of the project and insufficient evaluation of the environmental costs and benefits of alternative pipeline routes. The Panel also raised questions about the basis of a proposed formula for revenue allocation to the production region. It found that before 1997, consultations with the local community and civil society had taken place in the presence of security forces but that there had been improvements since 1999. It made various suggestions to improve compliance with World Bank Policy. Bank management responded to the report by proposing that certain additional measures be taken, though it disputed some of the Panel's findings. The proposed measures were accepted by the Board.

## IV. EVOLVING INITIATIVES: ACTORS AND ISSUES

### The UN Global Compact

The Global Compact, initiated by the UN Secretary-General in 1999, invites business entities to commit to international norms regarding human rights (including those relating to the labour regime) and environmental protection.

Business organizations which express support for the Compact are expected to make the assessment of the risks of human rights abuses, and their potential complicity in such, a part of their decision-making process in evaluating a project. They should also:

- Ensure respect in their workplaces for international norms regardless of any weaknesses in local laws;
- Avoid complicity in violations of the rights of communities affected by their operations;
- Take interest in compliance or breaches by their suppliers; and
- Contribute to the implementation of the internationally accepted regime in the societies in which they operate.

The Global Compact also asks for a commitment to greater environmental responsibility. This involves, *inter alia*:

- Applying the precautionary approach (which is discussed in Section V) in situations of uncertainty regarding environmental impacts;
- Applying the same standards to a company's operations wherever they are located;
- Communicating with communities in their areas of operation;
- Inculcating a corporate culture of environmental awareness; and
- Encouraging the application of environmentally friendly technology.

These are the main implications of the nine broad principles of the Global Compact. It is envisaged that the application of the principles in concrete situations will be enhanced by exchanges of company experience and in Policy Dialogues and projects involving business, labour, NGOs, academics, governments, the UN and other intergovernmental organizations.

## The Global Mining Initiative

The Global Mining Initiative (GMI) has been a three-year project instituted by nine of the world's largest mining and mineral companies who are also members of the World Business Council on Sustainable Development (WBCSD). It has been a vehicle for the industry to respond to a crisis of legitimacy it has faced. It has also been a means for the industry to contribute to the broader discussions on sustainable development, a recent focal point of which was the World Summit (WSSD) held in Johannesburg, South Africa.

An important aspect of the GMI was the Minerals Mining and Sustainable Development (MMSD) Project. The International Institute for Environment and Development (IIED), a research and policy formulation body based in London, was commissioned by the WBCSD to execute the Project. Its outcome has been the publication of a report entitled "Breaking New Ground". It seeks to capture and analyze a broad variety of perspectives on a wide range of issues concerning the mineral industry in the context of sustainable development and to make recommendations relating to the issues it covers. Among the issues the report addresses are those relating to:

- The control, use and management of land;
- Acquiring, managing and distributing mineral wealth;
- Protecting and promoting human rights;
- Maximizing mining's contributions to local communities;
- Mining, minerals and the environment;
- Access to information;
- Artisanal and small-scale mining; and
- The roles and responsibilities of different actors in the regulation of the sector.

Another aspect of the GMI has been the establishment of the International Council on Mining and Metals (ICMM) with a Secretariat located in London. This body is made up of the heads of some of the largest companies in the industry. It has set out an agenda of priority issues to be pursued further to the GMI process. These include:

- Developing standards of best practice which contain public reporting obligations and mechanisms for independent verification;
- Addressing, in collaboration with the International Union for the Conservation of Nature (IUCN), the issue of the limits or exclusion of mining in or from protected areas; and
- Developing plans and tools at mining sites for promoting sustainable development of local communities.

## The World Summit on Sustainable Development (WSSD)

The WSSD was held to review progress (or lack thereof) in the implementation of Agenda 21, the plan of action adopted by UNCED at Rio de Janeiro in June 1992. UNCED also adopted the Rio Declaration on Environment and Development, containing twenty-seven principles to guide the international community in working towards sustainable development. The Convention on Biological Diversity and the Framework Convention on Climate Change were also opened up for signature at UNCED.

WSSD adopted the Johannesburg Declaration on Sustainable Development and a Plan of Implementation. The Declaration reaffirms commitment to sustainable development, to advancing and strengthening its “interdependent and mutually reinforcing pillars .... - economic development, social development and environmental protection - at local, national, regional and global levels”, and to Agenda 21 and the Rio Declaration. It asserts that “poverty eradication, changing consumption and production patterns, and protecting and managing the natural resource base ..... are overarching objectives of, and essential requirements for sustainable development.” It states a recognition of “broad-based participation in policy formulation, decision-making and implementation at all levels” as a requirement of sustainable development. It asserts the duty of the private sector to “contribute to the evolution of equitable and sustainable communities and society”, and the need for corporate accountability “within a transparent and stable regulatory environment”.

The Declaration also contains an undertaking to improve governance at all levels, an assertion of the need for “effective, democratic and accountable international and multilateral institutions” and an affirmation of commitment to the UN Charter and to international law. The Plan of Implementation repeats and elaborates many of the broad statements in the Johannesburg Declaration. It also refers to a number of international instruments whose ratification, further implementation or enforcement it advocates. Specifically with regard to mining, the Plan acknowledges its importance to economic and social development in many countries and calls for actions at all levels to:

- Support efforts to address .... [its] impacts and benefits;
- enhance the participation of stakeholders; and
- foster sustainable mining practices.

Clearly, the Plan of Implementation does not aim at the elaboration of Agenda 21, which it incorporates by reference.

## The Extractive Industries Review

In response to persistent criticism of the World Bank Group's funding of oil, gas and mining projects which have had or have been perceived to have negative impacts on affected communities or the environment, the Group instituted the Extractive Industries Review (EIR). Its object is to help the World Bank, through a process of consultation, obtain and better understand the views of interested and influential actors as to the Bank's role in these industries in the context of poverty reduction and the promotion of sustainable development.

The process consisted of a series of regional workshops attended by representatives of civil society groups, industry, government and academia, project visits by members of the EIR team; commissioned research and communications via the project website. The process, which was launched in September 2001, was led by Dr. Emil Salim, the Chairman of WSSD, as Eminent Person. At the same time, a parallel evaluation was conducted by the evaluation units of the World Bank Group, namely, Operations Evaluation Department (OED) for the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA) and the Operations Evaluation Group for International Finance Corporation (IFC). The final report from the consultation process was presented to the Bank in January 2004. The OED report was presented in July 2003.

## Communities and Small-Scale Mining

The Communities and Small-Scale Mining (CASM) network was launched in March 2001. Its mission is to reduce poverty by supporting integrated sustainable development of communities affected by or involved in artisanal and small-scale mining in developing countries.<sup>18</sup> It aims to do so by supporting projects, disseminating experience and building a network of interested and knowledgeable organizations and individuals. It is sponsored by the Department for International Development (DFID) of UK, the World Bank, Conservation International, ICMM, ILO, various UN agencies and the Japanese Institute for Geo-Resources and Environment. Its Secretariat is located in the Mining Department of the World Bank.

<sup>18</sup> See [www.casmite.org/about.html](http://www.casmite.org/about.html).

## The Kimberley Process

The effects of civil wars on the populations of three diamond-producing African countries – Sierra Leone, Angola and the Democratic Republic of the Congo (DRC) – as well as on their neighbours and the contribution to those wars of resources obtained from illicit diamond trading led to a campaign by a number of NGOs against conflict diamonds, or “blood” diamonds. The diamond industry, as well as African producing countries, were sufficiently concerned about the potential effect of the campaign (on them) to take steps aimed at addressing the problem.

UN sanctions against rebel movements in Sierra Leone and Angola were reported to have been violated through recourse to the illicit diamond trade. Both the Security Council and the General Assembly therefore had reason to take an interest in addressing the issue. In DRC, rebel groups as well as elements in armies and officials from other African countries, including some supporting the Government, were reported to be participating in the exploitation of the country’s natural resources, either unlawfully or on terms inimical to its people. The effects of instability in DRC on the people and nations of the Great Lakes region was also a matter of concern to the UN.

The initiation of the Kimberley Process in May 2000 was the result of the concern by the industry and African producing countries. It seeks to commit countries to a system of tamper-proof packaging and national certification to agreed standards of the origins of each parcel of rough diamonds exported out of or imported into a participating country. The industry would also introduce warranty requirements as to the origin of diamonds into trading contracts. The process has involved the participation of 30 governments, the European Union (EU), the diamond industry and various NGOs.

The UN General Assembly has, in two resolutions (55/56 dated 1 December 2000 and 56/263 dated 6 February 2002) welcomed and endorsed the process. Criticisms persist of the adequacy of the verification mechanisms which have so far been agreed upon as contained in the Kimberley Process Working Document dated 20 March 2002.<sup>19</sup> The EU is also considering measures to enforce the certification regime.

<sup>19</sup> “Essential Elements of an International Scheme of Certification for Rough Diamonds with a View to Breaking the Link between Armed Conflict and the Trade in Rough Diamonds”.

## Summary:

Recent international initiatives relating to mining operations include the following:

- The UN Global Compact
- The Global Mining Initiative
- The World Summit on Sustainable Development
- The Extractive Industries Review
- The Communities and Small-Scale Mining Projects
- The Kimberley Process

## V. EVOLVING INITIATIVES: LEGAL IMPLICATIONS

### Sustainable development

With the exception of the Kimberley Process, the initiatives summarized in the preceding section express themselves as contributions to sustainable development. That term was popularized by the Report of the World Commission on Environment and Development (WCED), the Brundtland Commission published in 1987 and, subsequently, by the Rio Declaration and Agenda 21. Its central idea is that development (and development projects) should take account of economic and social dimensions, environmental protection and the needs of future generations in a coherent and integrated manner.

The proposal for integrated decision-making in relation to development issues may seem obvious. However, its significance is exemplified by various disputes that have occurred in the context of tensions between promoting free trade, on the one hand, and protecting the environment on the other. There have been cases before dispute-settlement bodies of the World Trade Organization (WTO) in which prohibitions imposed by the U.S. on tuna and shrimp imports purportedly for the protection of dolphins and sea turtles have been challenged on the ground that they violate applicable WTO treaties.<sup>20</sup> The extent to which the WTO bodies could take into account international environmental norms not expressed in those treaties has been at issue. Sustainable development encourages approaches to breaking down such compartmentalization in the making, interpretation and application of treaties.

The term has also become a vehicle for mobilizing around a range of ideas relating to the protection of human rights and the environment and for the development or advancement of various norms or aspirations as to the proper conduct and regulation of economic activity. Success in developing international norms around these issues has a tendency to limit what is accepted as solely within the domestic jurisdiction of a State and, increasingly, to impose obligations on various participants in the mining industry.

<sup>20</sup> The Tuna Dolphin Cases, 30 International Legal Materials (1991) 1958 & 33 International Legal Materials (1994) 839; the Shrimp Turtle case, Panel Report, WT/DS58/R (1998), Appellate Body Report, WT/DS58/AB/R (1998).

## The increasing role of Non-Governmental Organizations

Charnovitz (1997) has recently reminded us that NGOs have been active on international issues for centuries. However, as he also notes, there has been an intensification of NGOs influence since the UN Conference on the Human Environment (UNCHE) in 1972. They have been active in the formulation of law and policy as well as enforcement, particularly in the areas of human rights and the environment.

Article 71 of the UN Charter empowers the Economic and Social Council (ECOSOC) to make suitable arrangements for consultation with NGO which are concerned with matters within its competence. ECOSOC's mandate is to conduct or commission studies regarding international economic, social, cultural, educational, health and related matters and to make recommendations to the General Assembly, the specialized agencies of the UN or to member States.

It has established procedures for according consultative status to non-profit voluntary NGOs. The rules relating to the accreditation criteria and processes and its incidents are contained in ECOSOC Resolution 1996/31. As of 12 October 2002 there were more than 2000 NGOs in consultative status with ECOSOC and over 400 with the Commission on Sustainable Development (CSD). There is now hardly any major initiative involving the UN or its agencies that does not have a mechanism for obtaining NGO inputs into policy-making. Some country delegations at conferences include NGO representatives. Charnovitz (1997) refers to the Convention on the Rights of the Child and the Convention on International Trade in Endangered Species as examples of treaties to whose drafting or negotiation NGOs made substantial contributions.

A number of institutions that enforce international norms also provide opportunities for NGOs to draw their attention to violations of applicable norms or to make submissions in disputes before them. However, there remain significant rules that impose greater limits on the capacity of an NGO to participate in international litigation than exist with regard to States or intergovernmental organizations. But even where there is no formal role permitted to them, by publicizing instances of alleged violations and lobbying or pressurizing governments and intergovernmental organizations, NGOs participate in the enforcement of international norms.

## Human rights and communities affected by mineral operations

The Mining, Minerals, and Sustainable Development Report (2002) summarizes the scope of the concern for and the challenges of protecting the rights of affected communities in the context of mineral operations.

There is often a clash between the rights granted to a mining company and those claimed by members of the local community who may not have had any part in the decision to make the grant. Dissatisfaction within a community about bearing the brunt of adverse impacts of mining while obtaining little benefit has led to clashes in which State security agencies have acted, sometimes brutally, to protect the company's operations. Repressive governments have been known to act ruthlessly to suppress dissent about the allocation of burdens and benefits, even when there is no immediate threat to life or property. The execution in Nigeria of Ken Saro-Wiwa and eight other Ogoni leaders is an unforgettable instance.

The challenge to companies to avoid participation or complicity in human rights violations has led to the promulgation of several codes of conduct. The British and US Governments, a number of NGOs and mining and petroleum companies agreed on a set of Voluntary Principles on Security and Human Rights in December 2000 ("the Principles"). The Principles seek to further the implementation of applicable international norms and refer to two UN documents.<sup>21</sup> The Principles fall into three categories dealing with risk assessment, interactions between company and public security institutions and officials, and interactions between companies and private security agencies and their employees.

The Principles emphasize the importance of accurate risk assessment both for the initial investment decision as well as on a regular and continuing basis. They set out a number of factors and suggest their potential contribution to enhancing effective risk assessment. They recommend, among others, an examination of patterns of violence in the company's area of operation, of the human rights record of security and law enforcement institutions and the capacity of prosecutors and courts.

With regard to arrangements involving public security, the following are among the principles recommended:

- Consultation on a regular basis with government and the local community as to the impact of security arrangements on the community;
- Communicating the company's ethical conduct and human rights policies to the security agencies;
- Encouragement of transparency and accessibility of information;
- Proportionality of response to threats;
- Exclusion of persons implicated in human rights abuses from providing security;
- Respect for human rights and the rule of law; and

<sup>21</sup> These are the Code of Conduct for Law Enforcement Officials adopted by the General Assembly in resolution 34/169 of 17 December 1979, and Basic Principles on the use of Force and Firearms by Law Enforcement Officials.

- Recording and reporting of abuses perpetrated by public security officials in the company's area of operation.

Companies should, in relation to private security providers:

- Consider including the relevant principles in their contracts with them;
- Ensure that employees of the provider are trained to respect the rights of employees and the community;
- Require investigation of abuses; and
- Retain the power to terminate the relationship on the ground of unlawful or abusive conduct.

In a recent decision summarized below (box 2.3), the US Federal Appeals Court held that a US corporation can be made liable, as an aider and abettor for violations committed by soldiers guarding or otherwise working on the gas pipeline project in Myanmar (Burma) in which the corporation had an interest.

### Box 2.3

JOHN DOE I & 13 OTHERS v. UNOCAL CORPORATION & 2 OTHERS

(Judgment of the United States Court of Appeals, Ninth Circuit, September 18, 2002) [www.CA9.uscourts.org](http://www.CA9.uscourts.org)

The Plaintiffs were villagers from a region in Myanmar, (formally Burma). In two actions (which were consolidated for the purpose of determining whether or not their claims of fact would, if successful, justify holding the Defendants liable) they sued a U.S. company, its officers and a subsidiary (among others) in a U.S. court based on acts of forced labour, torture and rape to which they were subjected and of murder of family members committed by soldiers of Myanmar. They and others had been forced to clear paths and build roads and various facilities for a gas production and transportation project in which UNOCAL had interests. The Plaintiffs' actions were based on U.S. legislation, including one (the Alien Tort Claims Act), which conferred jurisdiction on federal courts in "any civil action by an alien for a tort ... committed in violation of the law of nations [i.e. international law]."

The Court of Appeals held that the Defendants could be made liable for several reasons, including the following: (1) the acts alleged were violations of international law; (2) it was not necessary for UNOCAL or its subsidiary or officials to have been involved in the acts to ground liability; (3) a person was liable for aiding and abetting if they gave "knowing practical assistance or encouragement that has a substantial effect on the perpetration" of the offensive acts; (4) the acts alleged against the Myanmar Military would "most probably ... not have occurred in the same way without someone hiring [them] ... to provide security and without someone showing them where to do it" (paragraph 12); and (5) "Unocal knew or should reasonably have known that its conduct - including the payments and the instructions where to provide security and build infrastructure - would assist or encourage the Myanmar Military to subject Plaintiffs to forced labour." (para. 13).

The cases were therefore remitted back to the trial court for evidence to be taken.

## Protection of minorities

Article 27 of the International Covenant on Civil and Political Rights (ICCPR) provides that in States where “ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language.”

This provision has been actively invoked in relation to mining and other resource projects with a potential for significant impact on the lives of minorities. Though the right protected is one attributed to individuals, its enjoyment requires being “in community with others.” The right to the enjoyment of culture has been interpreted to include the use and control of natural resources. In the case summarized in box 2.4, it was stated that “the rights protected by Article 27 include the right .... to engage in economic and social activities which are part of the culture of the community.” Thus, the grant of a mining right which substantially disrupts traditional resource use by minorities can be held to be in violation of article 27.

### Box 2.4

APIRANA MAHUIKA and others. v NEW ZEALAND (No.547/1993)

(Before the Human Rights Committee established under the International Covenant on Civil and Political Rights. Views of the Committee, delivered on 15 November 2000.)

A complaint was made by nineteen Maori individuals alleging against the Government of New Zealand violations of certain articles of the Covenant, including Article 27. It arose out of certain measures taken by the Government regarding fishing rights with the avowed objective of fisheries management. The complainants or authors, as they are called in the language of the Human Rights Committee, contended that fishing was one of the main elements of their traditional culture and that the measures taken by the Government were threatening their way of life and their culture.

The Committee acknowledged that “the use and control of fisheries .... [was] an essential element of their culture” and “that economic activities may come within the ambit of Article 27.” It observed that “[a] State may understandably wish to encourage development or allow economic activity by enterprises. The scope of its freedom to do so is not to be assessed by reference to a margin of appreciation, but by reference to the obligations it has undertaken in Article 27.”

In the particular case, the Committee held that the facts before it did not establish a breach of the authors' rights. In arriving at that conclusion, it made reference to the extensive process of consultation of and negotiation with Maori groups and the fact that the measures complained of had been agreed to and expressed in a settlement agreement with a large number of groups which provided for significant benefits to Maoris.

It concluded that “while it [was] .... a matter of concern that the settlement and its process [had] ... contributed to divisions among Maoris, nevertheless, .... the State party [had] ....., by engaging itself in the process of broad consultation before proceeding to legislate, and by paying specific attention to the sustainability of Maori fishing activities, taken the necessary steps to ensure that [the measures were] ..... compatible with Article 27.”

## Participation in decision-making

Paragraph 44 of the Johannesburg Plan of Implementation and Principle 10 of the Rio Declaration insist on the principle of public participation in decision-making in environmental matters.

This Principle has been most notably implemented in the UN Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention), which came into force on 30 October 2001. Forty countries have signed the treaty. Of those twenty-two had, as at 4 October 2002, ratified it. It is likely to serve as an influential model far beyond the geographical region to which it is applicable.<sup>22</sup>

The Convention imposes obligations relating to:

- The provision of environmental information;
- Avenues for and effective public participation in decision-making on environmental issues; and
- Access to fora for litigating decisions on them.

There are obligations on the parties to the Convention to collect, supply and disseminate environmental information to those who ask, or may be affected by it and to the general public. They are also to publish national reports on the state of the environment at intervals not exceeding four years. And they are to encourage operators within their jurisdiction to inform the public regularly about the environmental impact of their activities.

With respect to activities which could have significant environmental effects, parties to the Aarhus Convention are required to ensure that those likely to be affected by or to have an interest in them (including NGOs) are effectively informed early in the decision-making process. There are detailed provisions as to the information to be supplied. Avenues for public participation must be made available early in the process when all options are still open. Persons who intend to apply to engage in operations with potentially significant impact must be encouraged to inform and enter into discussions with the affected or interested public prior to submitting their application. Annex I to the Convention lists certain activities to whose licensing process the participation obligations apply. These include some involving the production and processing of metals, cement clinker, asbestos, and quarries and opencast mining if they are above specified thresholds.

The Convention also contains provisions requiring access to an independent and impartial forum for the enforcement of the rights it requires to be granted to affected or interested persons.

<sup>22</sup> See Zillman and others (2002), Chs. 1 and 4.

## The precautionary principle

The Johannesburg Plan of Implementation adopted at the WSSD reaffirms commitment to Principle 15 of the Rio Declaration, which it quotes:

“In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

This principle is generally acknowledged as being influential in the development of environmental law, particularly at the international level. Its precise status as a legal principle is, however, still subject to controversy. Its application involves an assessment of the magnitude or significance of identifiable risks to the environment and the state of scientific knowledge as to the chances of a risk materializing. It is used in specific areas to determine what measures should be taken regarding identified risks. In that context it may have the effect of changing the burden of proof as between those proposing a response to a perceived risk and those who think that there is insufficient evidence to warrant taking action.

The use of the precautionary principle may justify a decision that might otherwise have been set aside on the ground that it was not based on adequate evidence.

### Summary:

- Sustainable development requires integrating environmental and economic considerations. NGOs are increasingly being recognized as legitimate stakeholders in promoting sustainable development.
- Respect for the rights of affected communities is an aspect of sustainable development.
- Measures to protect the environment may be justified or required even where potential threats are uncertain.

## VI. NATIONAL LAW: OWNERSHIP, LICENSING AND REGULATORY ISSUES

### Who owns minerals?

Different legal systems make different provisions as to the ownership of minerals before they are mined. In some, the state is the owner; in others, mineral rights go with land ownership; in yet others, some minerals are vested in the state and others in the landowner. In South Africa, as in some other countries, mining companies over time acquired mineral rights in respect of substantial areas. It is in this context that controversy over the vesting of minerals in the state arose. The Mineral and Petroleum Resources Development Act 2002 seeks to effect that while preserving vested rights which are being utilized. Its provisions are not yet in force and will only come into effect on a date or on dates specified by the President.

Where minerals are vested in a collective body - the state or a landowning community, for example - the exercise by its representatives of the power to make grants may be challenged on the ground that the terms of a grant do not adequately advance the interests of the group that they represent. Whether or not such a challenge is successful in adjudication depends on the legal system's rules as to who can bring an action and also what enforceable legal (as opposed to political or ethical) obligation is imposed on the person in whom the power is vested. Adjudicating bodies may be more willing to enforce procedural obligations such as to consult affected persons and to conduct environmental and social impact assessments, than to engage in judging the adequacy of the terms on which grants are made.

Where minerals are vested in the state, questions may still arise as to the rights of local or regional units or, in a federation, between component states and the federation (see Box 2.5).

**Box 2.5**

ATTORNEY-GENERAL OF THE FEDERATION V. ATTORNEY-GENERAL OF ABIA STATE (NO.2) (2002)

6 Nigerian Weekly Law Reports page 542

Supreme Court of Nigeria

The Constitution of Nigeria vests in the Federal Government “the entire property in, and control over all minerals, mineral oils and natural gas in, under or upon any land in Nigeria or in, under or over the territorial waters and the Exclusive Economic Zone of Nigeria.” It also provides that at least thirteen per cent of revenue from a natural resource must go to the state from which it is derived.

A dispute arose between the Federal Government and eight states as to the sharing of revenue from offshore petroleum operations conducted on the continental shelf of Nigeria. The eight states contended that they were entitled to at least thirteen per cent of the revenue from such operations carried on the part of the continental shelf adjacent to their land territory.

The Supreme Court held, agreeing with the Federal Government, that the sea is not part of the territory of any state. The Court said that international law gave Nigeria limited sovereignty over a breadth of the sea contiguous to her coastline as well as an exclusive economic zone. The powers incidental thereto were those of the Federal Government. “[T]he seaward boundary of a littoral state ... for the purpose of calculating the amount of revenue accruing ... directly from any natural resources derived from that state pursuant to Section 162(2) of the Constitution of the Federal Republic 1999”, the Court held, “is the low water-mark of the land surface or (if the case so requires as in the Cross River State with an archipelago of islands) the seaward limits of inland waters within the State.” (p. 660 F-G).

## Licensing regimes

There are four key issues on which legal systems make rules for the process through which governmental authorities grant permission for the conduct of mineral operations. These are

- (1) The determination of areas available;
- (2) How decisions regarding grants are made;
- (3) Who is empowered to make a grant or who participates in the decision; and
- (4) Consents arising from environmental considerations.

Rules on these matters may determine the validity of a grant or of a decision refusing an applicant for a grant .

In some regimes, a mineral right may be granted to any part of the country other than such as are specifically excluded. Thus forests, cultural sites, built-up areas and other sensitive ecological zones have to be identified, at least by category, as reserved areas. A decision rejecting an application to mine based on the nature of the place to which it relates would not be lawful, or at any rate would give rise to liability, if the area concerned was not within a designated category. Such a regime therefore requires a thorough and systematic identification in advance of categories of areas to be excluded from mineral operations. An opposite approach,

adopted in some countries, is to make declarations of areas open for mining and to restrict grants to such. A third approach is to leave open the decision as to whether or not an area is available to be made upon consideration of a specific application, though some prohibited areas may be specified in advance. The flexibility in decision-making that this approach gives can be an advantage, as it allows relevant factors to be taken into account in a concrete context. However, it can also provide an opportunity for corruption and caprice.

A decision as to the person to whom a mineral right is made could be left as a matter of discretion, subject to whatever broad constitutional and administrative principles regulate the exercise of governmental discretion in the particular legal system. Or it could be further regulated in a number of ways. The decision-maker could be required to make a grant to the first qualified person who applies. Such a rule eliminates any assessment of the comparative merits of different applications that meet whatever eligibility criteria apply. That is its weakness, particularly as eligibility criteria are usually minimal and easily met. Its strength is simplicity of application. It is designed to reduce the opportunity for corrupt or capricious decision-making.

A different possibility is to require that an application be considered and decided upon one way or another before any subsequent one regarding the same area is considered. If the first application is rejected, reasons must be provided which will be used for assessing decisions on subsequent applications. The object of this procedure is to reduce the chances that a leak as to the existence or the terms of a prior application might prompt a subsequent one by a favoured applicant.

A third method of regulating the discretion to decide on the successful applicant is to require that it be made by an auction process. Bids would be submitted sealed and all would be opened at the same time. A selection would then be made based on an evaluation of all qualified bids. This method is meaningful only when the areas available have been systematically demarcated and significant information about identifiable blocks and substantial interest among potential bidders exist.

The allocation of responsibilities to different officials or institutions regarding decisions to grant or reject applications for mineral rights can be a means of regulating discretion. For large-scale projects, the grantor of the mineral right in many jurisdictions is the Minister responsible for mines. Provision may be made requiring him to consult a public body or official. In Zambia's Mines and Minerals Act, for example, the Minister is required to obtain the advice of a Mining Advisory Committee made up of six public officers. Each member of the Committee is to act in accordance with his own judgment and shall not be subject to any direction from any person or authority.<sup>23</sup> If the Minister intends to disregard the advice of the Committee, he must state his reasons for doing so in writing.

<sup>23</sup> Zambia Mines and Minerals Act, 1995 (No.31)[1995] section 88(2) and 2nd Schedule, paragraph 3.

In Ghana, the mining legislation vests the power to grant mineral rights in the Minister, but he is to act “on the advice of the Minerals Commission”,<sup>24</sup> a statutory body with responsibility “for the regulation and management of the utilization of ... mineral resources and the coordination of the policies in relation to them.”<sup>25</sup>

The reality of power relations, at least in many developing countries, is such that the institution upon whose advice the Minister is expected to act is likely to be influenced to a degree by any strong indication of the Minister’s preference. Nonetheless, these arrangements allow for technical inputs to be made into the granting decision.

The Ghana Constitution of 1992 requires that the grant of a right to exploit a natural resource must be ratified by Parliament, though there is provision for delegation of the ratification power as well as for exemption of categories of grants.

Some countries assign decisions on grants in standard form or of rights whose exercise does not involve substantial investment to an official whose profile is not as high as that of a Minister. And, in some instances, decisions may even be made at a local rather than a central government level. For example, the power to grant a small-scale quarry licence may be vested in a district council or other local government body.

The challenge here is to offer procedures for open and efficient decision-making, taking into account the concrete circumstances of particular countries.

National legal regimes increasingly prescribe mechanisms for evaluating and regulating the environmental impacts of mining activity. Environmental law regimes identify activities that will not be permitted unless their potential impacts have been assessed. While forms of exploration that cause minimal disruption may be excluded, significant mining activity will normally require an environmental licence in addition to the mining right. Such a licence may be issued only after an evaluation of the likely environmental and related social impacts of the mining project.

An environmental assessment involves identifying potential effects and ways to prevent, reduce or compensate for them. The report which will emerge from such an assessment would identify existing or baseline conditions relating to physical geography as well as the biological and human environment. It would indicate the potential impact of activities envisaged by the mining operation, inter alia, on:

<sup>24</sup> Ghana Minerals and Mining Law, 1986 (PNDC Law 153), section 14(2).

<sup>25</sup> Ghana Minerals Commission Act, 1993 (Act 450), section 2(1).

- Air;
- Water -- availability and quality -- for use by humans, animals and plants;
- Soil conditions;
- Noise levels;
- Cultural and historical sites and special ecological zones; and
- Settlement and economic conditions.

It would propose measures to address the impacts, including assessments of alternatives considered.

The process of assessing potential impacts and the appropriate response to them is now usually expected to involve eliciting inputs from affected communities and the holding of public hearings.

Plans for monitoring and managing impacts over the life of a mining project may be required or articulated as a matter of good practice. Defaults in fulfilling commitments contained in impact assessment reports and management plans may give rise to legal liability or result in the cancellation of licences. Legal systems may set standards regarding permitted levels of emissions or discharges from the project and in respect of rehabilitation of affected sites. Financial mechanisms such as bonds or guarantees issued by banks, insurance companies or parent companies with high financial ratings, may be prescribed to offer some assurance that adverse environmental impacts would be remedied where the operating company defaults.

## Security of tenure

An important concern of those engaged in mining activities, particularly those which involve substantial expenditure prior to deriving revenue, is that their rights should not be disrupted by unilateral action on the part of governmental authorities or by interference from others. The duration of the mineral rights should also be for a sufficient period to enable meaningful activity to be conducted and, in the case of production rights, should allow for recovery of exploration and development costs as well as a return on investment.

Rights for exploration are given for relatively short periods, typically between twelve months and three years. There is provision for renewing them for further periods if the holder is not in default of its obligations. The holder may be required to relinquish a specified percentage of the area covered by the exploration right at each renewal. The object of such mandatory relinquishment provisions, which is to discourage speculative holding on to acreage of interest to others, may be further pursued by structuring rental fees so that they substantially increase the longer an area is held under an exploration licence.

Those who invest in exploration expect to be granted mining rights where they establish the existence of commercially exploitable deposits. Where regimes do not give the exploration licence holder an automatic right to mine, laws, regulations or agreements would normally seek to establish criteria which, if met, would entitle the holder to the grant of a mining right. Disputes as to whether or not the criteria have been met would be available for resolution by courts, arbitration, third-party expert determination or other stipulated mechanisms.

Grounds and procedures for suspending or cancelling a mineral right are also provided for in legal regimes. In some, mineral rights can only be cancelled for failure to fulfill financial obligations. Default in the performance of environmental obligations, for example, may lead to the suspension of an environmental licence but not in the termination of the mineral right. In others, breach of any legal obligation would be a justification. A decision to suspend or cancel must, usually, be preceded by notice to the rights holder and an opportunity for it to make good the default or to submit representations. The decision itself may also be subject to agreed dispute-resolution mechanisms such as those previously mentioned.

An aspect of concern for security of tenure is whether or not the holder has exclusive rights to the area concerned or has to co-exist with others. Some exploration rights, such as to conduct aerial reconnaissance surveys, are less likely to be exclusive than those which involve relatively intensive work on the property. The latter may be exclusive with respect to specific minerals or to all minerals. If exclusivity is limited to specified minerals, the resolution of the terms of the co-existence of holders of different rights would have to be effected by the grantor with the respective grantees. Matters are less complicated if an exclusive right to all minerals is granted. The grantee is then empowered to negotiate terms with persons who are interested in minerals other than those on which it is focused if their respective operations can co-exist.

Pursuant to the proposition that freely marketable titles enhance their attractiveness to prospective investors, some regimes allow for the unhindered transferability of mineral rights and their use as security. Others require the consent of the grantor for assessing the capabilities of the transferee. The decision on whether or not to grant consent may be regulated by setting out applicable criteria.

A critical area of mining law is addressing tax and other fiscal impositions. Companies engaged in large-scale mining desire to have a predictable and stable fiscal regime over the life of a project. Governments, however, prefer to have the flexibility to formulate policy as and when judged appropriate. In many instances governments from developing countries have agreed to maintain tax arrangements over the life of a mine as a condition for investments to be made in their mineral sector. Breaches of such undertakings have been held to be in violation of the law applicable to the project, indeed, to constitute expropriation,<sup>26</sup> sometimes without regard to whether or not the new measure is reasonable or comparable to

<sup>26</sup> See Somarajah (1994), Ch. 8.

those in other jurisdictions. Attempts to reconcile the interests of companies and governments in this area have led to the design of fiscal measures expressed in formulae in which the rate of tax is to be adjusted in a predetermined manner based on specified profitability indicia. The threshold points at which the tax rate would change are important in assessing whether the formula has the potential to yield additional revenue to government if a project does much better than anticipated, or merely gives the semblance of possibilities which will never really materialize.

## Summary:

National legal systems have different rules determining:

- Who owns minerals
- What areas are available for mineral operations
- Who grants mineral rights
- How environmental considerations are taken into account
- Available mineral rights and their incidents
- Security of tenure of rights holders

## Mineral rights and other interests in land or other resources

### Areas of tension

The exercise of mineral rights usually involves a user of land or other resources therein which may compete with alternative uses. In some instances, forms of co-existence between mineral rights holders and other users are possible. For example, a right to mine for thirty years over an area of fifty square kilometres can co-exist with a right to engage in peasant farming for food crops in respect to those parts of the land not being used for mining at a particular time. The exercise of the right to mine would not require exclusive possession of the whole area subject to it. If co-existence is possible and permitted, rules as to the conduct of different activities may be formulated, or procedures may be prescribed for resolving user conflicts when they occur. A specified period of notice to farmers may be required before mining is conducted in an area in which they are farming. Or, to take another example, mining may be permitted in certain forest zones on condition that obligations relating to reforestation are met, that mineral processing activity is conducted outside the zone and that rights granted to others to harvest timber are respected.

Where co-existence is not possible, mining activity may be prohibited (as in sensitive ecological zones) or permitted in return for compensation made for interests that give way.

## Compensation

Compensation encompasses the payment of money, resettlement of people and provision for people affected to earn an alternative livelihood, the setting up of trust funds or scholarships and the provision of job opportunities and training. This sub-section will explore the broad issues relating to compensation including what it should achieve, the considerations that go into deciding what form it should take, who should receive compensation, and for what loss it should be made. The next sub-section will look in more detail at resettlement, both voluntary and compulsory. The sub-section after that will address mechanisms by which affected communities may share in the revenue generated by mining.

States differ in their approach to compensation matters. Some set compensation standards or require that certain factors be considered in assessing compensation. Some require, in respect of compulsory acquisition of property, “prompt payment of fair and adequate compensation” and if the acquisition involves displacement of inhabitants, the State must resettle them “on suitable alternative land with due regard for their economic well-being and social and cultural values”.<sup>27</sup> South Africa’s constitutional provisions leave “the amount, timing and manner of payment” of compensation subject to agreement between the parties “or decided or approved by a court” but require that compensation must be “just and equitable, reflecting an equitable balance between the public interest and the interest of those affected.” South Africa’s Constitution also prescribes certain “relevant factors” that must be taken into account in assessing the compensation payable. According to the Constitution, relevant factors include:

- The current use of the property;
- The history of the acquisition and use of the property;
- The market value of the property;
- The extent of direct State investment and subsidy in the acquisition; and
- The purpose of the expropriation.

Major lenders such as the World Bank have formulated internal policy guidelines that address the provision of compensation, including resettlement, for loss, damage or inconvenience caused or to be caused by the projects that they sponsor. The view taken by countries to such guidelines may differ. For example, in the World Bank-sponsored Bujagali Hydropower Power Project, the Ugandan Government took the position that it did not wish to set precedents based on compensation amounts assessed on the World Bank’s guidelines. A compromise was reached whereby the project company provided an “additional uplift” designed to fulfill World Bank guidelines to address those areas that were not covered by Ugandan legislation.

<sup>27</sup> Ghana Constitution, 1992, Article 20(3).

The objective of compensation has been to place the affected persons in a position no worse than they were in before the activities giving rise to it took place. The World Bank's policy requires that "displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of the project implementation, whichever is higher".<sup>28</sup>

The obvious losses for which compensation should be made are interference with rights to land, loss of use and damage to land, loss of or damage to crops and cost of building on the land. The areas in which loss occurs would depend, among other factors, on the people affected, their means of livelihood and their cultural and social habits. In developing a compensation policy for the Fiji minerals sector, the following compensation categories were identified:

- Loss, damage, or alteration to the natural state of the land;
- Social and cultural disruption, damage to the natural environment (including unanticipated environmental damage and pollution); and
- Loss of recreation and conservation values.

It was recognized that each category except that for social and cultural disruption, was quantifiable in monetary terms. To address loss for social and cultural disruption, it was proposed that "a socio-economic programme" be developed between the parties to include training and educational and cultural programmes.<sup>29</sup>

In relation to the construction of a 3,150 km long gas pipeline running from Santa Cruz de la Sierra in Bolivia through Corumbá in Brazil to São Paulo (the Bolivia-Brazil Gas Pipeline Project) cash provision was made for ecological and socioeconomic compensation programme for both Brazil and Bolivia. A trust fund was also set up to provide for the cost of protecting and managing the Kaa-Iya (Gran Chaco) National Park situated in Bolivia.

The World Bank's policy on Involuntary Resettlement identifies the following three categories of persons affected by a project:

- Those who have formal legal rights to land (including customary and traditional rights recognized under the laws of the country);
- Those who do not have formal legal rights to land at the time the census begins but have a claim to such land or assets – provided that such claims are recognized under the laws of the country or become recognized through a process identified in the resettlement plan; and
- Those who have no recognizable legal right or claim to the land they are occupying.

Those persons contemplated in the second category include those with claims based on "adverse possession, from continued possession of public lands without government action for eviction (that is, with the implicit leave of the government), or from customary and traditional law and usage."

<sup>28</sup> World Bank OP 4.12, Involuntary Resettlement.)

<sup>29</sup> McLeod (2000)..

Paying cash as reparation has been criticized in certain circumstances on the grounds that, even if it is made at full replacement cost, it may not be possible to use the cash or invest it in such a way as to ensure continued development, or at least to avoid impoverishment. Past experience shows that cash may be used up in meeting daily needs during the period between the displacement and setting up the new economic activity. Pearce (1999) suggests that cash compensation should be restricted to resettlers who have “the experience to invest money in new assets and have access to reasonably functioning markets; or where employment opportunities are available”.<sup>30</sup> The World Bank’s policy on compensation recommends that “cash compensation may be appropriate where:

- Livelihoods are land-based but the land taken for the project is a small fraction of the affected asset and the residual is economically viable;
- Active markets for land, housing and labour exist, displaced persons use such markets, and there is sufficient supply of land and housing; or
- Livelihoods are not land-based.”<sup>31</sup>

## Resettlement

Resettlement involves the relocation of persons from one habitat to another and occurs in three distinct situations. It may be voluntary, if there is a choice as to whether or not to move or involuntary, if it involves the forced relocation of people, often whole villages, under applicable laws. There is also the situation where the inhabitant cannot legally be compelled to move but is forced to due to conditions prevailing on his land or in his surroundings. This usually occurs in mining projects, particularly surface mining, where the government, as owner of the mineral rights, grants those rights to the mining company without addressing the surface rights of the landowner. The landowner’s activities on the land may be disrupted by the mining operations to such an extent that he can no longer carry them out.

The profile of people who choose to relocate may differ from those who are forced to. Studies suggest that compulsory and voluntary resettlement is often disproportionately handled by governments to the detriment of those forcibly displaced (Eriksen, 1999). Compulsory relocation was often, although treated as a necessary component to the project giving rise to it, subordinate or secondary to it.<sup>32</sup> In order that what purports to be a voluntary scheme is not a disguised form of involuntary resettlement, it is necessary that procedures be adopted to ensure informed and independent decision-making by those affected.

<sup>30</sup> Pearce (1999), p 77.

<sup>31</sup> World Bank OP 4.12.

<sup>32</sup> See Eriksen (1999) for a full comparison of involuntary and voluntary resettlement projects using case studies from five countries.

## Involuntary resettlement

In most countries, persons may only be compelled to resettle if the government determines that it is necessary for the public good or in the public interest or for the greater benefit of society as opposed to the adverse effect on the affected persons. Development projects such as the construction of dams or highways have, on that basis, been said to justify the forced relocation of peoples. Dams or roads cannot be created just anywhere. Critics say that sometimes, only a counting of numbers is done: those who might benefit and those adversely affected. Little attention is paid to the real human suffering that involuntary resettlement causes.<sup>33</sup>

Where an acquisition of land is to be made for an activity engaged in by private persons rather than a State institution, the question is sometimes raised whether that can be said to be in the public interest. Nigeria's Land Use Act of 1978 allows the governor of each state to compulsorily acquire lands on the grounds of "overriding public interest". "Overriding public interest" is defined to include "The requirement of the land for mining purposes or oil pipelines or for any purpose connected therewith."

Even where it is accepted that an acquisition for private use could be in the public interest, an acquisition for mining purposes may be challenged where it entails the forced physical, cultural and social dislocation of people who have lived on the land for long periods, are dependent on it and will suffer great hardship if compelled to relocate. It is no longer taken for granted that anticipated gains from mining necessarily establish what is in the public interest without reference to those who are forced out of their traditional homes.

The situation of indigenous people living on lands holding mineral deposits has become a matter of international concern. Their special position was recognized by the UN in the 1989 International Labour Organization (ILO) Convention Concerning Indigenous and Tribal peoples in Independent Countries, which seeks to protect indigenous people against the power of the State within which they live.

## Formulating a resettlement policy

The following are some of the matters that should inform a resettlement policy:

- The undertaking of feasibility studies to determine whether or not there are alternatives to the planned project or to its location;
- Transparent dialogue with the potentially affected persons, including host communities before, during, and after the implementation of the project;

<sup>33</sup> See Roy (1999), commenting on, *inter alia*, the decision in *Narmada Bachao Andolan v Union of India & others*. Judgment of the Supreme Court of India. WPC No. 319 of 1994.

- A thoroughly researched resettlement plan identifying, among other things, the types and number of people affected, land use systems in the new location, ecological and economic factors, the size and location of the new settlement area, a timetable for the relocation, and sensitization of the host communities;
- Creation of a resettlement team comprising, or at least providing access to, such specialists as environmentalists, geologists, counsellors; and
- Resettlement should be regarded and treated as a development opportunity for the improvement of the lives and livelihood of the people affected.

## Mechanisms for community sharing in mining revenue

It is possible for minerals to be owned by the State while the land in which they are located is owned by another entity. In such a situation, rent for land use by the holder of the mineral right is due to the landowner. This may be negotiated between the parties or prescribed by governmental authorities. In some countries, traditional authorities, such as chiefs, have a significant role in land ownership as representatives of communities in which land is vested. They may thus be the recipients of rent due to their community. Even where they are not representing the landowner, social norms may require that payments be made to them in acknowledgment of their authority or as contribution to customary events, such as festivals, over which they preside.

A property rate is often levied under legislative authority by local government bodies on property within their area. Mining property could be a significant component of revenue for local government. In recognition of the adverse impact of mining on neighbouring communities, governments may allocate to them a portion of the revenue that accrues to the state therefrom. Formulae identify the proportion of revenue to be thus allocated, the institutions or groups within the local community that should benefit and what their respective shares should be. Sometimes, government institutions are created to disburse such funds or apply them to purposes judged to be beneficial to the local community. Oguine (1999) notes that such institutions are liable to be bureaucratic, inefficient and lack the legitimacy of representative bodies within the affected community.

Making payments to local institutions is not, of course, a guarantee against misuse or misappropriation. Regular publicizing of sums paid, establishing requirements for accounting for money received, including periodic and published reporting arrangements as well as rules for deciding on how funds are to be used, are ways to reduce the dangers of impropriety.

Mining companies or their nominees may also set up trust funds administered by themselves or their nominees to respond to their perceptions of how to contribute to local development or to request for assistance from the communities.

Schemes by which governments allocate portions of mining revenue to local communities as well as trust arrangements established by companies may identify the scope of permitted uses of funds that they make available. A concern that such funds should be seen to make a difference may lead to a decision that they should not be used for recurrent expenditure; or it may be stipulated that they are not to be used to finance business activities.

### Summary:

- Mineral rights sometimes co-exist with other rights to land.
- Where co-existence is possible, it may be regulated by law.
- Where it is not, mineral operations may be prohibited.
- Or else, other rights may be terminated and compensation made.
- Compensation is mainly in the form of money or resettlement.
- Resettlement may be either voluntary or involuntary.

## VII. ADMINISTRATIVE, ADJUDICATING AND ENFORCEMENT INSTITUTIONS

### Administrative institutions: range, effectiveness, and coordination

Many different government institutions have the responsibility for different functions that have a bearing on mineral operations. There are those involved in the formulation of mineral policy, the grant of mineral rights and the monitoring of operators' compliance with the terms of their grants and mining laws. Ministries of mines, mines health and safety departments and geological survey institutions are examples of such bodies. Even where there is a central environmental regulatory agency, there may also be specialized institutions dealing with particular areas, such as forest and water resources. The formulation and application of financial and fiscal policy may require inputs from the Ministries of Finance, Mines and Planning, the central bank and revenue agencies.

It is easy for jurisdictional battles to occur between institutions arising from overlapping mandates or from the perspectives that each brings to the question of the appropriate regulation of mining. There are mechanisms for facilitating cooperation. A committee made up of representatives from different institutions may be assigned a decision-making or advisory role. Inter-agency understandings can be agreed upon (if necessary at the prompting of higher governmental authorities) by which primary responsibility in a designated area is assigned to a particular institution, with opportunities for others to provide input. The allocation of responsibilities ought to take account of the quality of resources available or likely to be available to each institution.

Where different institutions issue their own permits, inter-agency understandings can also settle those whose permit will be regarded as a pre-condition for the issue of another. For example, the mineral licensing authority may agree not to issue a mining right in a forest zone unless the forestry authority has already agreed to issue a permit. Or else, the process of considering applications to different institutions may be coordinated. An environmental impact hearing may thus be coordinated between the Environmental Protection Agency (EPA), the forestry authority and the Ministry responsible for mines.

## Dispute resolution and enforcement

The difference between resort to court, on the one hand, and to arbitration, on the other, in the context of international dispute resolution institutions has been identified in Section III. It is possible for disputes relating to mineral rights to be taken to State courts or to arbitration within a particular State setting.

The courts of the State within which the mineral resource is located offer one possibility. Their jurisdiction over the parent or an affiliate of the company operating in the country may, however, be limited. This may be significant if the local company is a project vehicle, with limited resources, of a multinational enterprise. Particularly where foreign investors and the host State are involved, recourse is sometimes had to a different jurisdiction – neither that of the host state or of the investors. For that purpose, the host State may be asked to waive its right to claim immunity in proceedings before the foreign court. Such waiver of immunity may be required for both in respect of the institution of proceedings and the enforcement of judgments against the host State's assets in the foreign country. If an unqualified waiver is given, property belonging to the host state and its institutions, such as bank accounts, can be put at risk.<sup>34</sup>

Arbitration under the auspices of national laws may be used as a means of having a dispute resolved without joining the queue of overcrowded court lists. Or else an arbitrator could be chosen for his or her specialized expertise on the matter at issue. The enforceability in other countries of national court judgments and awards made pursuant to proceedings under national laws may depend on reciprocal arrangements made under treaty provisions.

There are other institutions, such as national human rights commissions or ombudsmen, which can entertain complaints regarding the grant of mineral rights or activities carried out thereunder. Some of these may have the power to make orders whose disobedience could result in sanctions. Others have to resort to courts or other institutions to enforce their decisions. Yet others are only empowered to make non-binding recommendations, though the weight of their reputation may compel respect.

### Summary:

- A variety of administrative institutions bear on mineral operations.
- Forms of co-ordination are available for coherent decision-making.
- Disputes relating to mineral rights or operations may be dealt with in

<sup>34</sup> see Akpan (2002)

## VIII. CONCLUSION

The grant and exercise of mineral rights are now subject to a broad range of norms and standards well beyond the traditional focus of mining law. The paradigm of sustainable development has become a vehicle for elaborating these norms and for attempting to integrate them in a coherent manner. Assertions of national sovereignty are being constrained by internationally prescribed norms and by the variety of fora in which States and holders of rights are being called to account by a widening range of actors on behalf of or taking into account interests affected by mining.

## REFERENCES

- Akpan G.S., 2002. "Litigating Problems that Arise from Natural Resources Exploitation in Foreign Courts: Impediments to Justice." *Journal of Energy & Natural Resources Law* 20, 55- 78.
- Bastida E., 2001. "A Review of the Concept of Security of Mineral Tenure: Issues and Challenges." *Journal of Energy & Natural Resources Law* 19, 31 – 43.
- Bastida E., 2002. "Mineral Law and Policy." [www.naturalresources.org/minerals/education/-distlearn.htm](http://www.naturalresources.org/minerals/education/-distlearn.htm).
- Birnie, P.W., Boyle, A.E. 2002. *International Law and the Environment* (2nd ed). Oxford University Press Oxford.
- Boyle A., Freestone D. (eds.) 1999. *International Law and Sustainable Development, Past Achievement and Future Challenges*. Oxford University Press, Oxford
- Brownlie I., 1998. *Principles of Public International Law* (5th ed). Oxford University Press, Oxford.
- Brownlie I., 2002. *Basic Documents in International Law* (5th ed). Oxford University Press, Oxford.
- Buergenthal, T., 2002. *International Human Rights in a Nutshell* (3rd ed). West Publishing, St. Paul, Minnesota.
- Cernea M.M., 1999. "The Economics of Involuntary Resettlement." The World Bank.
- Cernea M.M., 1997 "African Involuntary Population Resettlement in a Global Context." The World Bank.
- Charnovitz, 1997. "Two Centuries of Participation: NGOs in International Governance." 18 *Michigan Journal of International Law* 183.
- Clark A.L., Clark J.C. 1999, "The New Reality of Mineral Development: Social and Cultural Issues in Asia and Pacific Nations." *Resource Policy* 25, 189-196.
- Evans M., Murray R., 2002. *The African Charter on Human and People's Rights: The System in Practice, 1986 – 2000*. Cambridge University Press, Cambridge.
- Fisher E. 2001. "Is the Precautionary Principle Justiciable," *Journal of Environmental Law* 13(3), 315 – 334.
- Goyal, A. Mohd, N. (eds), 2001. "WTO in the New Millenium" (5th ed.). Academy of Business Studies and MVIRDC World Trade Centre (New Delhi).
- Handl G., 1998 "The Legal Mandate of Multilateral Development Banks as Agents for Change toward Sustainable Development." *American Journal of International Law* 92, 642-665.

- Hilson G., Murck B., 2000. "Sustainable Development in the Mining Industry: Clarifying the Corporate Perspective." *Resources Policy* 26, 227 – 238.
- Humphreys D., 2001. "Sustainable Development: Can the Mining Industry Afford it?" *Resources Policy* 27, 1-7.
- Lodge, M.W., 2002. International Seabed Authority's Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area. *Journal of Energy of Natural Resources Law*, 20, 270-295.
- McLeod H., 2000. "Compensation for Landowners Affected by Mineral Development: the Fijian Experience." *Resources Policy* 26, 115-125.
- MMSD, 2002. *Breaking New Ground: The Report of the Mining, Minerals and Sustainable Development Project*. Earthscan Publications Ltd., London.
- McCaffrey, S.C., 2001. *The Law of International Watercourses: Non-Navigational Uses*. Oxford University Press, Oxford.
- McMahon, G., Remy, F. (eds.) 2001. "Large Mines and the Community: Socioeconomic and Environmental Effects in Latin America, Canada and Spain." The World Bank.
- Oguine, I. , 1999. "Nigeria's Oil Revenues and the Oil Producing Areas." *Journal of Energy and Natural Resources Law*, 17, 111-120.
- Omalu, M.K., Zamora, A., 1999. "Key Issues in Mining Policy: A Brief Comparative Survey on the Reform of Mining Law." *Journal of Energy & Natural Resources Law*, 1713- 38.
- Otto, J., 1996. "Foreword: The Changing Regulatory Framework for Mining Ventures." *Journal of Energy & Natural Resources Law*, 14 (3) 251-261.
- Otto, J., UNCTAD. "Mineral Policy, Legislation & Regulation." [www.naturalresources.org/-minerals/generalforum/docs.htm](http://www.naturalresources.org/-minerals/generalforum/docs.htm).
- Pearce, D.W., 1999. "Methodological Issues in the Economic Analysis for Involuntary Resettlement," in *Cernea*, 1999, p. 50-82.
- Pring (Rock) G., Otto J., Naito K., 1999. "Trends in International Environmental Law Affecting the Minerals Industry" (Part I). *Journal of Energy & Natural Resources Law* 17, 39-55.
- Pring (Rock) G., Otto J., Naito K. 1999. "Trends in International Environmental Law Affecting the Minerals Industry" (Part II). *Journal of Energy & Natural Resources Law* 17, 151- 177.
- Pring (Rock) G., Zillman D.N., Lucas A.R., 2002. "Law of Public Participation in Global Energy and Resources Development: a New IBA Book." *Journal of Energy & Natural Resources Law* 20, 79 – 83.
- Pring (Rock) G., UNCTAD. "International Law and Mineral Resources." [www.natural-resources.org/minerals/generalforum/docs.htm](http://www.natural-resources.org/minerals/generalforum/docs.htm).

- Roy, A. 1999. "The Greater Common Good." [www.narmada.org/gcg/gcg.html](http://www.narmada.org/gcg/gcg.html).
- Sands, P. 1995. *Principles of International Environmental Law I: Framework, Standards and Implementation*. Manchester University Press, Manchester.
- Sands, P., 1994. "International Law in the Field of Sustainable Development". *The British Year Book of International Law*, 1994. Oxford at the Clarendon Press.
- Schrijver, N., 1997. *Sovereignty over Natural Resources: Balancing Rights and Duties*. Cambridge University Press, Cambridge.
- Shaw, M.N., 1997. *International Law* (4th ed). Cambridge University Press. Cambridge.
- Slomanson, W.R., 2000. "Fundamental Perspectives on International Law" (3rd ed). West Thomson Learning. <http://home.att.net/~slomansonb/txtcesite.html>.
- Sornarajah, M., 1994. *The International Law on Foreign Investment*. Cambridge University Press, Cambridge.
- Sornarajah, M. 2000. "Protection and Guarantees of Investment". *Commonwealth Law Bulletin*, 26(2) 1290-1297.
- Steiner, H.D., Alston P., 2000 *International Human Rights in Context* (2nd ed) Clarendon Press, Oxford.
- UNCTAD 1999 "Trends in International Investment Agreements: An Overview", United Nations.
- UNCTAD, 2000. "Taking of Property". United Nations.
- Welch, C.E., 1995. *Protecting Human Rights in Africa Strategies and Roles of Non-Governmental Organizations*. University of Pennsylvania Press, Philadelphia.
- World Commission on Environment and Development (WCED), 1987. *Our Common Future*. Oxford University Press, Oxford.
- Zillman, D.N., Lucas A.R., Pring G., 2002. *Human Rights in Natural Resource Development: Public Participation in the Sustainable Development of Mining and Energy Resources*. Oxford University Press, Oxford.

## **SUGGESTIONS FOR FURTHER READING**

### **International Law Generally**

Brownlie (1998)

Shaw (1997).

Slomanson (2000).

### **Permanent Sovereignty Over Natural Resources**

Schrijver (1997).

### **International Law On Investment Protection**

Sornarajah (1994).

Sornarajah (2000).

UNCTAD (2000).

UNCTAD (1999).

### **International Environmental Law**

Birnie (2002).

McCaffrey (2001).

Sands (1995)

Pring, Otto, and Naito (1999).

Pring (UNCTAD).

### **International Human Rights Law**

Buergenthal (2002).

Steiner and Alston (2000).

### **International Adjudicating Institutions**

Brownlie (1998).

Evans (2002)

Shaw (1997).

Slomanson (2000).

### **Sustainable Development**

Birnie and Boyle (2002).  
Boyle and Freestone (1999).  
Clark and Clark (1999)  
Fisher (2001).  
Handl (1998).  
Hilson and Murck (2000).  
Humphreys (2001)  
Pring (2002).  
McMahon (2001).  
Sands (1994)  
WCED (1987)

### **Mineral Law Regimes**

Bastida (2001).  
Bastida (2002).  
Otto (UNCTAD)

### **Compensation And Resettlement**

Cernea (1999).  
McLeod (2000).

### **Recommended Journals**

ICSID Review – Foreign Investment Law Journal  
Journal of Energy and Natural Resources Law  
Resources Policy

## USEFUL WEBSITES

African Union, [www.africa-union.org](http://www.africa-union.org)

Centre for Energy, Petroleum & Mineral Law and Policy, [www.cepmlp.org](http://www.cepmlp.org)

Centre for International Environmental Law, [www.ciel.org](http://www.ciel.org)

Extractive Industries Review, [www.eireview.org](http://www.eireview.org)

Communities and Small Scale Mining, [www.casmite.org](http://www.casmite.org)

Global Witness, [www.globalwitness.org](http://www.globalwitness.org)

Global Policy Forum, [www.globalpolicy.org/security/issues/diamonds](http://www.globalpolicy.org/security/issues/diamonds)

International Centre for Trade and Sustainable Development, [www.ictsd.org](http://www.ictsd.org)

International Council on Mining and Metals, [www.icmm.com](http://www.icmm.com)

International Court of Arbitration of the International Chamber of Commerce, [www.iccwbo.org](http://www.iccwbo.org)

International Court of Justice, [www.icj-cij.org](http://www.icj-cij.org)

International Finance Corporation, [www.ifc.org](http://www.ifc.org)

International Institute for Environment and Development, [www.iied.org](http://www.iied.org)

International Labour Organization, [www.ilo.org](http://www.ilo.org)

International Union for the Conservation of Nature, [www.iucn.org](http://www.iucn.org)

Kimberley Process, [www.kimberleyprocess.com](http://www.kimberleyprocess.com)

Mineral Resources Forum Law and Policy, [www.natural-resources.org](http://www.natural-resources.org)

UNCTAD, [www.unctad.org](http://www.unctad.org)

United Nations Economic Commission for Europe, [www.unece.org](http://www.unece.org)

United Nations Environmental Programme, [www.unep.org](http://www.unep.org)

United Nations High Commissioner for Human Rights, [www.unhcr.org](http://www.unhcr.org)

United Nations Organization, [www.un.org](http://www.un.org)

The World Bank, [www.worldbank.org](http://www.worldbank.org)

World Bank Inspection Panel, [www.worldbank.org/ipn/ipnweb.nsf](http://www.worldbank.org/ipn/ipnweb.nsf)

World Business Council on Sustainable Development, [www.wbcsd.org](http://www.wbcsd.org)

WWF-The Conservation Organization, [www.panda.org](http://www.panda.org)



## **MODULE 3**

# **MINERAL RENT AND REVENUE MANAGEMENT**



## SUMMARY

This module covers the collection and distribution of mineral revenues. Mineral resource rent is the value of the product of a mineral deposit minus all necessary costs of production, including a minimum acceptable profit. A sound tax system will collect a large portion of the rent for the resource-owning country, although the amount of rent expected from any resource is uncertain. Effective resource taxation relies on the taxes on profits or cash flow that are tax realized, not forecast. To secure a fair share of revenues over time for public use, a mineral tax system must create sufficient incentives for companies to explore and invest.

The tax regime must not drift too far out of line from those in countries with similar prospectivity and operating conditions. The government can tax more if it structures taxes in ways that reduce risks faced by investors. “Tax neutrality” does not mean uniform tax rates and tax rules across all sectors; the presence of rent, the origin of investment and the risk profile of the business all make a difference. The single greatest constraint on effective taxation is likely to be the capacity of the Ministry of Finance and the taxation authorities to design and administer a sound system of taxation based on profit or cash flow. A suitable fiscal scheme is needed to make the cost of abandonment and reclamation “internal” to the economics of a mine. The allocation between the government and the investor of the cost of project infrastructure and of infrastructure of social or environmental value in the mining area is a hidden aspect of the fiscal terms.

Governments face the inter-related problems of uncertainty and instability in the flow of mineral revenues. The fiscal problem is to tax mineral income efficiently and then deal with the consequences of wide fluctuations in revenues that efficient taxation may yield. To achieve macroeconomic stability, it is preferable to rely on aggregate expenditure and revenue management, not inefficient tax devices or short-term alterations in taxes.

Sound fiscal rules for medium-term macroeconomic management are not always easy to design. Nevertheless, relatively simple rules can have political value in sustaining a consensus of support behind sound management. Some countries have chosen to use a non-renewable natural resources fund (NRF) to support such fiscal rules. Such funds are no substitute for sound overall fiscal management, but in some circumstances they may strengthen it.

Permanent income is the income from mineral production available to support current consumption without diminishing the stock of wealth for future generations. Spending of permanent income means sustainable use of mineral resources

– not just in an environmental sense but also in the sense that mineral wealth extracted from the ground converts into other forms of income-producing financial assets.

Funds might have any of three principal objectives:

- Stabilization – The priority is to shield the economy from short and medium-term instability in mineral revenues;
- Savings – To save wealth for future use on grounds of inter-generational equity (perhaps incorporating a permanent-income approach); and
- Precautionary – Where future mineral developments are uncertain or the capacity of the economy to absorb spending is in doubt.

No type of fund is a substitute for good fiscal management. A poorly designed or managed fund could undermine it. Integration of a fund into a sound fiscal system requires:

- A consolidated budget framework;
- A liquidity constraint on the government budget; and
- Limits on domestic investment from the fund.

For many African countries, the level of public external indebtedness carries the risk that new mineral revenues will simply be dissipated in additional debt-service payments or in reduced amounts of debt relief. Retirement of debt held on commercial terms would almost certainly be a wise use of new mineral revenues. Retirement of concessional debt would be desirable only to the extent that it clears arrears and restores creditworthiness to a country. Beyond that, everything depends on the attitude of creditors.

The principal benefit of mining activity is usually the fiscal revenue to the government. Marginal mines should be kept open with fiscal concessions only if the social benefits outweigh the social costs (including environmental costs). Similarly, caution is necessary over proposals to give tax privileges or subsidies to downstream processing of minerals.

Economic arguments call for centralization of mineral revenues (taxing powers) at the national or federal level. Demands and pressures for decentralization of taxing powers to regional or provincial governments can become very strong. Local governments can benefit from transfers to support specific expenditure programmes and from rights to more stable revenue flows (such as royalties). Assignment of revenue instruments creates the political implication of greater local autonomy. Special expenditure programmes may meet local aspirations while better protecting fiscal integrity at the national level. Assignment of either revenue or expenditures to regional and local governments may not meet communal aspirations. General guidelines spring from experience of national/local sharing arrangements.

## INTRODUCTION

This module covers the collection and distribution of mineral revenues under the following headings:

- Securing mineral rent for public use – The principles of mineral tax systems, including tax administration, provision for abandonment and mine reclamation and provision of infrastructure;
- The relationship between mineral revenues and fiscal policy – How efficient taxation may create new fiscal management problems and the rules that might be followed;
- The concept of “permanent income” (sustainable current spending from mineral revenues);
- The use of special funds to manage mineral revenues, whether precautionary, stabilizing or saving for future generations; and
- Issues in the distribution of revenues including support for marginal mines or downstream processing and distribution among different levels of government and local communities.

## I. SECURING MINERAL RENT FOR PUBLIC USE

### The concept of mineral rent

A mineral resource can generate rent for its owner. Mineral resource rent is the value of the product of a mineral deposit minus all necessary costs of production – including the minimum return to capital required to bring about investment. If taxation is only applied at the point of mineral rent, the payments of production (labour and capital) and immediate inputs (explosives fuels, water and power) are not taxed. This means that the taxation of rent should not alter pre-tax investment decisions. This principle is known as “tax neutrality”.

The rent from a resource cannot be known with certainty in advance. It depends on realized prices, actual ore grades encountered and the evolution of costs. Effective resource taxation thus requires “conditional payments” (such as taxes on profits or cash flow) that tax realize, not forecast, the rent.

### Designing a tax system

Government’s tax policy influences both the pattern and pace of mineral development and the share of revenues which government can obtain from each project and from the sector as a whole. A mineral tax system must reconcile the twin (and conflicting) objectives of:

- Creating sufficient incentive for companies to explore and invest; and
- Securing a fair share of revenues over time for public use.

In meeting these objectives, there are three helpful guidelines:

- The fiscal regime must not drift too far out of line from those in countries with similar prospectivity and operating conditions;
- The government can tax more if it structures taxes in ways that reduce (or at least do not add to) risks faced by investors; and
- “Tax neutrality” does not mean uniform tax rates and tax rules across all sectors; the presence of rent, the origin of investment and the risk profile of the business all make a difference.

## Tax burden and tax structure

A focus on individual tax instruments (for example, royalties, import duties, income taxes) can be very misleading. The overall impact of the regime is more important and that is what potential investors will assess in making their decisions. The tax burden is the government take, on average, over the life of a mine or oil field. The tax structure is the path over time of the marginal tax burden – the way the tax burden is imposed at different points in project life. Government can achieve a higher tax burden over project life (total government take) by designing a tax structure that offers rapid return of investment (payback) and relates higher taxation closely to achieved profits or realized cash flow.

Against this background, the design of the mineral tax system should balance two considerations:

- 1) Minimize additional risk to investors of absolute loss. It should tax rent once realized rather than a forecast of revenues (that may turn out to be wrong) and that may imply imposition of taxes adding to legitimate costs; and
- 2) Offer the prospect of stability of fiscal and contract terms. The regime should reduce the risk that terms will be altered if a project turns out to be especially profitable. It must offer a revenue yield that will be widely seen as reasonable in all the circumstances.

The components of this balance might be:

- Measures promoting rapid payback of investment (such as accelerated depreciation);
- Focus on the taxation of profit (rather than inputs or gross output);
- A device (such as royalty) providing early revenue to government and some payment whenever production occurs;
- An eventual overall tax burden high enough to outweigh temptation for governments to change terms but leaving sufficient upside incentive for the investor; and
- Relief from taxes on inputs where these are distortionary (such as Value Added Tax (VAT) without an adequate refund system).

The tax regime should not contain hidden elements such as infrastructure surcharges or discriminatory fuel duties. The direct taxation of mineral income, plus reasonable taxation of inputs and outputs, should represent the effective overall tax burden on the mineral industry. The fiscal and legal reforms recently undertaken in Tanzania provide a good example of an effective mineral tax package that has stimulated very large inflows of investment (box 3.1).

## Constraints on effective taxation

The single greatest constraint on effective taxation is likely to be the capacity of the Ministry of Finance and the taxation authorities to design and administer a sound system of taxation based on profit or cash flow.

In the area of tax design the simplest matter may be the determination of a tax rate that can be determined using international comparison. More complicated is the establishment of rules for deductions, particularly a suitable scheme for depreciation (of tangible assets) or amortization (of intangible assets), termed “capital allowances”, and rules for the deduction of debt interest.

Normal company income tax (CIT) imposed on manufacturing and service activities tends to include capital allowances based on the useful life of the asset. In the mining sector, a particular operation will have a finite life either because the deposit will be exhausted or because the relevant licence will expire. In addition, much of the capital expenditure will be incurred on intangible items (exploration or development drilling, waste stripping or shaft sinking, together with data interpretation and similar items) having no value outside the particular operation.

Large mining investments typically take longer to complete and longer to earn revenue than other types of investment. They can also have very large capital requirements and perhaps debt obligations. Some form of tax relief in the early years to make debt repayment easier and to speed up the recovery of total investment therefore considerably reduces risk and increases the incentive to invest. Relief by means of depreciation allowances implies a change in the timing of tax payments rather than revenue loss.

A number of important mining tax regimes in Africa provide 100% capital allowances; that is, immediate expensing of capital items. Examples include South Africa, Tanzania, Zimbabwe and Zambia. Others provide very rapid straight-line depreciation. Namibia provides for depreciation over three years. These schemes are simple to administer provided that the balance of the fiscal package makes the revenue postponement that produces tolerable results from an overall fiscal point of view.

### Box 3.1: Tanzania's Mineral Sector Reforms

In 1997 and 1998, the Government of the United Republic of Tanzania undertook a comprehensive reform of the legal and fiscal framework for the country's mineral sector. The reforms tackled an explosion of prospecting and, to some extent, mining activity on a small-to-medium-scale. Large mining companies remained unlikely to undertake substantial mine developments in Tanzania without contractual guarantees embodied in an agreement which provides for international arbitration. Such guarantees needed to cover fiscal stability, the right to hold foreign exchange abroad, environmental obligations, access to international arbitration and the exercise of residual ministerial discretion. The Mining Act 1998 therefore provided the necessary new forms of tenure for small and medium-scale activities while offering a Special Mining Licence, and a Mining Agreement, for large-scale developments. The Mining Agreement can make provision for stability of the fiscal terms as they apply on the date of the agreement. The general fiscal regime for mining had not been comprehensively reformed since independence in 1961. Numerous taxes on inputs were added over the years without due regard for the impact of the overall tax regime. The tax regime was complex, uncertain and, if applied in full, severe. Large companies therefore sought amendment to these terms by means of Agreements or special terms attaching to licences. This presented a substantial administrative problem and also meant that the applicable fiscal regime was far from transparent. The fiscal regime has been completely overhauled. The new regime is of general application and special fiscal deals are no longer made. For input taxes: customs duties were exempt for capital goods and inputs until the first anniversary of start of production, and thereafter capped at 5%. VAT replaced sales tax and made no net imposition on mineral exports. Withholding taxes were set at 3% on technical service fees (an important revenue source), at 0% on interest. For output taxes: royalty was set at 3% on netback value at the mine gate (5% for diamonds); royalty was deferred if the cash-operating margin fell below zero. Export tax was removed and substantial stamp duties were cut. For taxes on profit: income tax was set at 30% but other special rates for certain minerals were abolished. There was to be no ring-fencing within the mining sector. Tax depreciation was simplified to 100% for all assets, tangible and intangible. The one specific development incentive was a 15% annual capital allowance on the balance of unredeemed development capital expenditure. Withholding tax on dividends or branch profit remittances was set at 10%. Tanzania quickly became a premier destination for exploration expenditure in Africa and four major projects were developed after the reforms, with expansions and further projects planned. The Government was able to withdraw the capital allowance and deferral of royalty for new projects in 2002.

An alternative is to use “pool depreciation” – the system now operating in most industrialized countries. Under pool depreciation, assets are not depreciated individually but grouped into a “pool”: new expenditures are added to the pool and asset disposals removed (at either a realized or written-down value) each year. The value of the pool is depreciated at a set rate by the declining balance method each year, yielding the amount of depreciation deductible for tax purposes. Again the big advantage is administrative simplicity.

Use of debt finance means deduction of interest for CIT purposes. Interest must be deductible if the investor is to obtain a credit in its home tax jurisdiction for foreign tax paid. Most tax authorities operate rules to prevent excessive interest deductions. These include so-called “thin-capitalization” that limit the ratio of debt to equity or relate the maximum interest deduction to some portion of income during the year. Other devices include criteria to ensure that debt is contracted on reasonable commercial terms and prohibition of interest deduction if debt is provided by affiliates.

The effect of interest deduction can be offset by the imposition of withholding tax on interest payments. The problem here is that most international loan agreements contain “gross-up” provisions enabling the lender to increase interest charges by the amount of any such tax imposed. The use of a withholding tax may thus act only to increase the overall cost of a project.

Transfer pricing is often of greatest concern to tax administrations, particularly the transfer prices for sales of product to affiliates or purchase of services from affiliates. For the sale of readily marketable minerals (gold, copper) a reference price is readily available. In other cases and for ensuring standards for the prices of inputs and services, there is no substitute for the acquisition of necessary expertise through capacity-building over time and by use of international expertise as necessary.

The main alternative to effective use of CIT is to impose more substantial royalties (box 3.2). Because royalties act as an increase in the cost of mining operations, the maximum rate at which royalty can be imposed will yield less than the maximum rate at which profits-based taxation can be imposed.

### Box 3.2: Royalties on Mining

An appropriate royalty rate has also to be judged in light of the indirect taxes that are applicable to the early stages of operations and of the effect of depreciation provisions in postponing or advancing normal company tax payments. Some countries (notably Chile) have abolished royalty payments altogether, but royalty rates in the range of 1 to 3 % of the value of mine product still appear to be common and acceptable to investors. Among other countries which have attracted significant mining investment, Papua New Guinea levies a 2 % royalty, recently increased from 1.25 % (but also levies import duties, subject to limitations, and offers slower depreciation than is envisaged in Jordan); Indonesian precious metal royalties range between 1 and 2 %, varying according to a price-related formula. The Papua New Guinea charge is based on “net smelter returns” (i.e., transport, smelting and refining charges are deducted in arriving at the revenue for royalty), whereas the charge in Indonesia appears to be based on a gross international price for refined metals - Indonesia exempts import duties and related taxes for an extended period. Tanzania imposes royalty at 3 % on the ex-mine value of products.

Ghana operates a variable royalty system, with a minimum rate of 3 %. Namibia set its royalty for metals at 5 % but it is understood that this is negotiable in practice. South Africa has abolished mineral royalties on state leases. Zimbabwe levies no royalty under its general regime, but is understood to have used a royalty of 2.5 % for a project under a Special Mining Lease. Zambia reintroduced mineral royalties in 1994 at 3 % for base metals and 5 % for precious metals, but it is not clear that these rates have been effectively applied.

In Canada and Australia, royalty practices vary widely among states. Australian states tend to levy either specific royalties (monetary amounts per ton) or ad valorem royalties. Rates vary from 2 to 7.5 %, but the higher rate applies only to iron ore and manganese in Western Australia; the 2.5 % rate appears to be the most prevalent, but almost all states levy no royalty on gold. In Canada, only the province of New Brunswick still levies a traditional royalty, but since mineral resources are often privately owned, profit-related royalties are common forms of payment to resource-owners.

## Abandonment and reclamation costs

The heightened international attention of recent years to environmental concerns has brought particular focus upon the decommissioning, abandonment and reclamation of mining facilities and mine sites. Where mines have operated for very long periods, sometimes with many changes of ownership, the problem of liability for the eventual clean-up is acute. In the United States, for example, the problem was addressed by effectively making the current owner of a mine entirely responsible for all past and present environmental liability. In countries seeking to attract foreign investment to the mining sector, such an approach can only work for new investment if there is an understanding about how the costs of abandonment and reclamation will be met from the revenues that the mine generates during its operating life.

Where there is a large and diverse mining industry, companies may have more than one mineral enterprise. In this case, taxation rules can deduct the costs of reclamation and abandonment at one mine against the income from another, irrespective of the degree of “ring-fencing” of tax accounts that otherwise prevails. Such a provision, however, is of little use for a company working only a single mine or for the last mine to close in a company’s portfolio. Even if the company carries the abandonment obligation it has every incentive (apart from reputation) to undertake the minimum of work at the minimum cost.

An equitable way to meet abandonment costs might be to share the costs between government and company in proportion to their respective shares of cash flows over mine life. This would require government to find a cash lump sum in the abandonment year, thus raising questions for budget management.

An alternative way of achieving the same effect would be to allow tax-deductible provisioning against the estimated costs of abandonment. For example, at a point about 10 years before the expected date of abandonment, an abandonment plan would be submitted to government for approval. The cost of that plan would then be set aside in installments (provisions) each year; each installment would be equal to the proportion of the eventual abandonment cost that is the same as the proportion in the year of production relative to estimated remaining reserves.

Government could receive assurance that the abandonment work would be carried out in one of three main ways:

- The money could be placed in a trust fund under joint control of the company and government. This procedure may be unattractive to companies because a cash outflow would be shown in their accounts, depressing profits and share value when no expenditure on abandonment has yet been made;
- The company could post a bank guarantee for the estimated cost of abandonment; and
- The company could provide some other form of abandonment security, such as a parent company guarantee (relevant only for large companies of financial strength and those that would face reputational damage in failing to carry out environmental obligations).

Unless a fiscal scheme of this kind is put in place, the cost of abandonment and reclamation may not become “internal” to the economics of the project; the government may take as tax revenue funds that are required to mitigate environmental damage.

## Provision of infrastructure at mining projects

The allocation between the government and the investor of the cost of project infrastructure and of infrastructure of social or environmental value in the mining area is a hidden aspect of the fiscal terms.

Most developing countries will have sufficiently high borrowing costs and many alternative uses of available funds. Accordingly, most governments operate a basic policy under which they will not provide project-specific infrastructure: all infrastructure should be provided by the project developer as part of the capital cost of the mining project. The developer will then seek to charge any third parties for use they make of the facilities.

There may be two specific circumstances when provision of infrastructure by the government is worthwhile:

The first (rare in Africa) occurs where government is able to borrow normally from international sources on commercial terms and its discount rate is lower than that of a private investor when political risk is taken into account. Government provision of infrastructure may determine whether a project goes ahead or not and, provided that the project is suitably taxed, government may receive an adequate return on the infrastructure investment. A difference of discount rates may also arise where the investor’s risk premium increases with the scale of investment required. In that case government provision of infrastructure could function like a “farm-out” to another private investor so that the risks are more widely spread.

The second case (again rare) occurs if governments have access to subsidized credits that can be used for infrastructure but are not available to private investors themselves or available for other uses by the government.

Government can charge for infrastructure in these cases by any of three means.

- Provision at a tariff for use. In the case, for example, of electricity generation or water supply, government can simply charge the normal public use tariff. Government will then be entirely at risk and the return on the infrastructure investment may fluctuate. As well as the reduction of risk, there may be an element of subsidy to the mining project.
- Provision at the cost of funds

Government can, in effect, make a loan to the mineral project by directly charging its own obligations to pay interest and to make repayments of principal.

To the extent that the total cost of this provision falls below the investor's required rate of return, it is a subsidy to the project. Its effect on investment will also depend on whether the investor is obliged to guarantee repayment or the government takes the risk that the project will generate sufficient cash to repay.

- Provision at a target rate of return

A more ingenious approach would see the government providing infrastructure on terms that simulate a loan, but with interest at a rate representing a commercial return to the government. The "user charge" could be set as an annuity payment, with equal annual instalments designed to yield a pre-set rate of return on the government's outlays. If the discount rate remains below the private investor's, and if the investor does not guarantee the loan, this device could attract more investment than otherwise. This is very close to acquisition of equity in a project but with a fixed return to government and no direct participation

#### Box 3.3: Infrastructure provision at Ok Tedi

For the Ok Tedi copper and gold mine in Papua New Guinea, the government agreed to provide a road in return for an annual user charge designed to recover a 15 % rate of return (expressed as a 5 % margin over long-term US dollar Eurobond yields) on the government's capital outlays on the road. The private investors were not obliged to guarantee payment in the event of default by the project company. Payment of the user charge was deferred until the start of production and then deferred further unless a specified debt-cover ratio was met by the project. In this way, the government obtained a likely return more than sufficient for it to finance the road, the investors saw the road financed at a charge lower than their own discount rate and, for them, this finance was clearly "off balance sheet" (non-recourse) so their total exposure was reduced.

Some project infrastructure may have an expected third-part use or developmental purpose. For example, a source of electric power or a road may service more than one mine. Government might then want to assume responsibility for infrastructure to obtain the additional benefits. The Shashe Project around the Selebi-Phikwe mine in Botswana was driven by this motive.

Governments may want mining projects to act as catalysts for other social and economic benefits in the project region. Should companies have incentives to go beyond their immediate project needs and provide social infrastructure? One means of doing this is to require social provision in a development plan and then allow companies to write off the additional investment in the normal way for tax purposes. This reduces an investor's overall expected return.

An alternative is to devise a scheme of tax credits for approved social infrastructure expenditures. Provided that the eligible expenditures are limited to a cash amount each year, over time the exposure of government revenue to loss through these tax credits could be managed. Companies favour such schemes because of the public relations benefits in project regions. Governments may benefit if the infrastructure is then constructed more efficiently and at a lower cost than through normal public sector means.

## II. MINERAL REVENUES AND FISCAL POLICY

### Uncertainty and instability of mineral revenues

Governments face the inter-related problems of uncertainty and instability in the flow of mineral revenues. There is uncertainty both about intrinsic economics of a mineral deposit and about time profile of revenues (mainly because of uncertainty about the absolute level and time profile of prices).

The causes of instability differ among mineral commodities and, in particular, differ between hard minerals and petroleum:

- For hard minerals – short-run price inelasticity of supply (it takes time and significant investment to increase output even when prices rise; high fixed costs mean that output reductions may not be made in the face of falling prices) faces high short-run income elasticity of demand (demand increases quickly with rises in income) and low short-run price elasticity of demand (with given industrial processes demand does not respond quickly to price changes). Therefore, income-driven variations in demand tend to result in disproportionate fluctuations in prices.
- For petroleum – there is large capacity (more than half of world trade by value is in petroleum and petroleum products) with volumes easily adjusted up or down at short notice. As for hard minerals, there is again strong short-run income elasticity of demand, but in the petroleum case it interacts with volume constraints created by target pricing among OPEC members. Non-OPEC members can offset OPEC policies leading to wide fluctuations in oil prices.

Uncertainty and instability make it inefficient to set taxes on the basis of forecast outcomes. Taxes must respond robustly to various realized outcomes.

The fiscal problem is to tax mineral income efficiently and then deal with the consequences of wide fluctuations in revenues that efficient taxation may yield. An efficient tax system is likely to shift some of the risks of instability to the government. A government could seek a more stable flow of revenue by relying, for example, on royalties rather than profits-based taxes. This alternative, however, would diminish the total take available to the government over time because of the associated increase in the investor's risk of loss. It would probably reduce investment overall and reduce government take from any individual project.

## Interaction of taxation policy and fiscal stabilization

To achieve macroeconomic stability it is preferable to rely on aggregate expenditure and revenue management, not inefficient tax devices or short-term alterations in taxes.

General economic stability is required because:

- Stability reduces the risk premiums investors may attach to decisions. The higher the perceived risk the higher the required rate of return and thus the “price” of investment to the host country. A more stable, low-risk business environment thus increases the share of rent that, over time, the government can collect;
- Economic stability avoids disruption of major investment projects (public and private) and makes for more efficient investment decisions with more effective implementation;
- Economic stability strengthens a country’s position in negotiating or trading with the rest of the world; and
- Stability is vital to poverty reduction – those with few assets or skills are less able to withstand economic instability; instability endangers any programme of redistribution or poverty reduction.

## Fiscal rules for medium-term stability

Sound fiscal rules for medium-term macroeconomic management are not always easy to design. Nevertheless, relatively simple rules can have political value in sustaining a consensus of support behind sound management. Drawing upon the experience of a wide range of mineral and petroleum-producing economies, the following guidelines could be of value:

- *Limit growth of public sector demand:* Make a realistic estimate of the sustainable rate of capacity growth in the economy and keep the public sector contribution to demand consistency with this growth rate.

In other words, aim for a steady path of growth of public expenditure that does not accelerate beyond the capacity of the economy to deliver - whether from domestic production or sustainable levels of imports. Any spending in excess will cause inflation (or balance of payments problems). If the prices of domestic goods rise relative to the prices of imports, import-competing and exporting industries will become less profitable and be driven out of business. That is the beginning of the phenomenon known as “Dutch Disease”.

Excess mineral revenues are better saved abroad. Saving abroad does not enter the domestic money supply and therefore does not feed inflation. Investment in assets abroad does not inject demand that strains the capacity of the domestic economy.

The same rule can apply to a government that decides upon cuts in general taxation rather than increases in public expenditure. Demand must not be injected into the economy at a pace that exceeds the supply.

- *Conservative price forecasting*: Take account of uncertainty in forecasts and fluctuations in mineral revenues by using a forecast of mineral prices and output (for fiscal planning purposes) where the probability of a better-than-forecast outcome is greater than the probability of a worse-than-forecast outcome.
- *Develop a savings strategy*: The first two rules dampen short-term fluctuations by saving foreign assets in boom periods and spending from these balances in the down-turn. At the very least, it is advisable to accumulate significant precautionary balances, saved abroad, to deal with temporary revenue fluctuations.

These policies do not mean “fine-tuning” the economy. Automatic stabilizers will often be available in smaller mineral-dependent economies (imports can be paid for only from export income, companies remit profits in good times but less so in bad times). Some countries have chosen to use a non-renewable natural resources fund (NRF) to support such fiscal rules.

Such funds are no substitute for sound overall fiscal management but in some circumstances they may strengthen it.

### III. PERMANENT INCOME

Permanent income refers to the income from mineral production that can be used to support current consumption without diminishing the stock of wealth available to future generations. It implies a measure of mineral wealth per head of population.

Permanent income incorporates the idea of sustainable use of mineral resources – not just in an environmental sense but also in the sense that mineral wealth extracted from the ground is converted into other forms of income-producing financial assets.

Permanent income estimates offer only a guideline. Uncertainties in forecasting make them useful only as one element in the overall fiscal judgment. They have the political advantage of making explicit an object of inter-generational equity.

Generating a permanent income estimate requires:

- Mineral reserve data – adjusted for price forecasts and prospectivity;
- Estimated production profiles;
- Production cost or State take per unit of output;
- Probabilistic output price forecasts (to generate a range of estimates);
- Real interest rate: the potential yield on accumulated savings from mineral revenues; and
- Projected population growth rate.

Then:

- Estimate net real revenue per year to the State;
- Apply the real interest rate as a discount rate to estimate the present value of mineral wealth;
- Adjust this estimate of wealth for population growth over the chosen time period (say 30 years);
- Subtract the result from the total of real revenues accruing over the period.
- The balance is the amount that can safely be consumed while leaving the real value of wealth per head intact.
- This “consumable” amount can be spread over the period like an annuity or in some other way.

Sustainable consumption of permanent income does not rule out additional capital spending or retirement of debt.

The use of a permanent income approach is open to the argument that a wise current generation exercises self-denial in the interests of potentially foolish future generations. This would be so if, for example, the current generation does not use mineral revenues to meet pressing physical or social infrastructure needs or retires a sustainable level of debt.

## IV. NON-RENEWABLE NATURAL RESOURCES FUNDS (NRFS)

### Purposes of NRFS

Funds might have any of three principal objectives:

Stabilization – The priority is to shield the economy from short- and medium-term instability in mineral revenues;

Savings – To save wealth for future use on grounds of inter-generational equity (perhaps incorporating a permanent income approach); and

Precautionary – Where future mineral developments are uncertain or the capacity of the economy to absorb spending is in doubt.

### Relationship of funds to overall fiscal policy

No type of fund is a substitute for good fiscal management. Poor design or bad management could undermine it. Important mineral producers have operated fiscal policy without a separate fund (UK, Russian Federation, Saudi Arabia, Indonesia, Australia).

Three important features will integrate a fund into a sound fiscal system:

- A consolidated budget framework: Domestic government expenditure should be financed from the central fund, therefore any spending from the NRF should be channelled through the general government budget and the treasury system;
- A liquidity constraint on the government budget: There is no point in counter-balancing assets accumulated in the fund with borrowing from other sources, domestic or foreign, to finance the government budget; and
- Limits on domestic investment from the fund: Investments in the domestic economy financed from the NRF reduce the apparent level of saving and defeat the point of a fund (recalling the requirement to develop a savings strategy of accumulation of foreign financial assets).

Funds integrated into the consolidated budget using these principles become “financing funds”. Surpluses accumulated in the fund are true overall budget surpluses. The fund also finances (by spending or by leaving receipts with the government budget) the true non-mineral deficit of government.

## Stabilization funds

Examples: Chile, Papua New Guinea, Venezuela.

A pure stabilization fund aims not to build up wealth for the future but to avoid the destabilizing effects of mineral revenue fluctuations. It can operate in one of three broad ways:

- Receiving all mineral revenues and injecting regular amounts into the budget on the basis of a rolling forecast of revenues and sustainable expenditures (this was the original design of Papua New Guinea's now-defunct scheme);
- Financing the budget deficit or receiving the realized budget surplus when the budget itself is designed on medium-term stability criteria; (e.g. Kuwait and Norway) or
- Receiving all or a proportion of revenues above a chosen reference price for exported minerals and spending the balances when prices fall below the reference levels (Chile, Venezuela).

The main design problem for these funds is the estimation of sustainable mineral revenues over the cycle. Is there a cycle? Do commodity prices show a tendency to return to a forecast mean? Above all, how is it possible to determine when an upswing or downswing is cyclical and does not amount to a permanent economic shock that must be addressed by structural measures?

## Funds for future generations

Accumulation in a savings fund can also use a range of mechanisms:

- A fixed percentage of mineral revenues (Alberta, Alaska);
- A percentage of total government revenue (Kuwait);
- Net government revenues – that is, the budget surplus (Norway, box 3.4); and
- Mineral revenues in excess of a forecast budget amount (Oman).

Forecasting issues again arise, as do issues of expenditure and investment policy by the fund. No country explicitly uses a permanent income approach but some have an explicit intergenerational concern (Norway, Oman, Kuwait). The intergenerational concern can also give rise to anomalies if other current taxation is maintained at relatively high levels to permit accumulation in the NRF.

The greatest difficulty over a savings fund of this kind is to design rules that prevent the fund from being “raided” by an unscrupulous government. The only effective protection appears to be democratic accountability coupled with widespread public support for accumulation of savings.

## Precautionary funds

In the early stages of mineral development a country may assign all or part of mineral revenues to build up a precautionary balance without any particular expenditure or investment objective. The objective is to ensure financial viability if long-term revenues turn out to be lower than initially expected, or to prevent inefficient expenditure where absorptive capacity is low.

Recent examples of this strategy include Azerbaijan (using an explicit fund) and East Timor (no explicit fund).

## Fund management

The potential for poor management of mineral revenues remains present with or without a fund. The key elements in efficient management of a fund appear to be:

- Accountability to elected representatives;
- Independent audit of the fund's activities;
- A clear investment strategy with a large majority of assets held in foreign financial assets;
- "Benchmarking" of investment returns to be achieved, meaning comparison of the fund's returns in different market segments with those of a benchmark portfolio for the same market segment; and
- Competitive appointment of investment managers for the fund – with different managers for different market and geographical segments of the fund's holdings.

### Box 3.4: The Norwegian State Petroleum Fund

The Norwegian fund aims to:

- Smooth the path of spending out of volatile oil revenues; and
- Accumulate long-term savings from oil revenues to cope with rising pensions and related expenditures on an ageing population.

1.1. Norway established its petroleum fund by legislation in 1990, though savings in the fund only began in 1996. Savings in the fund stood at about \$US80 billion or 45 % of GDP at the end of 2001.

1.2. The aims of the fund formed part of the political process for establishing support for saving rather than higher immediate spending. The main fiscal rules governing the Norwegian fund are: The fund is integrated with the budgetary process; net accumulations in the fund are realized budget surpluses;

- The fund is not earmarked for any specific purpose (despite the political aim of pension provision);
- The fund is invested abroad; domestic spending from the fund is restricted to fund the non-oil budget deficit needs and is therefore spent through the budget process;
- The fund is established under law, managed by the Ministry of Finance and is accountable to the legislature;
- The fund is technically a Norwegian kroner deposit of the Government at the Central Bank; the bank acquires counterpart foreign assets. The Ministry of Finance delegates day-to-day management to the bank which, in turn, appoints fund managers within each investment sector for specific periods by competitive tender;
- The managers work under guidelines specifying the permitted ranges of bond and equity holdings, rules for the regional distribution of investments and upper limits on holdings in individual companies; and
- Investment success is measured against a “virtual” portfolio establishing a benchmark in each sector; currently the deviation from the benchmark must not exceed 1.5 %

## Mineral revenues and highly-indebted poor countries (HIPC)

The level of public external indebtedness, in many African countries carries the risk that new mineral revenues will simply be dissipated in additional debt service payments or in reduced amounts of debt relief.

Should a heavily-indebted country adopt a savings strategy for mineral revenues? If domestic expenditure of the new mineral revenues would exceed the prudent levels suggested earlier, then the issue is the comparison of the interest cost of servicing the debt and the likely return on mineral revenue savings. To the extent that external debt is held on concessional terms, it is quite possible that the return on savings will be higher than the cost of debt.

Retirement of debt held on commercial terms would almost certainly be a wise use of new mineral revenues. Retirement of concessional debt would be desirable only to the extent that it clears arrears and restores credit-worthy status to a country. Beyond that everything depends on the attitude of creditors.

## V. ISSUES IN DISTRIBUTION OF MINERAL REVENUES

### Marginal mines

The principal benefit of mining activity is usually the fiscal revenue to the government. If a mine is insufficiently profitable to pay tax should its development be encouraged? If it is operating should it be kept open? If the social benefits outweigh the social costs (including environmental costs) the answer is likely to be positive.

Mines do generate employment, though usually at modest levels. They keep infrastructure operating that may not otherwise operate. They create demand for support services and supplies. These activities may also generate tax revenue.

Should such mines be relieved of royalty? If a mine can meet cash operating costs and provision for its eventual closure then the deposit is probably worth exploiting even if the royalty is waived. In practice, it may be better to provide, in legislation, a specific economic criterion permitting deferral or waiver of royalty rather than create a discretion over the issue.

### Value added and downstream processing

When minerals are exported in “raw” form, frequent complaints arise that the benefits potentially available from downstream processing are simply being exported. Proposals sometimes follow that seek to give tax privileges or subsidies to downstream processing of minerals. There are problems with this approach.

The first arises from the trade practices of importing nations. If consuming countries impose high tariffs on processed materials then tax concessions in developing countries may not achieve their objective and may simply transfer revenue to richer countries.

Second, provided that the demarcation between basic mining activity and manufacturing or processing activity is correctly drawn in tax law, the economics of downstream activity should stand or fall on their own merits, without subsidy or further tax concessions. Downstream activity will not be subject to royalty or any other form of resource taxation; only to the normal regime for taxation of business activity.

Third, the export of raw materials may command a premium if there is excess processing capacity elsewhere in the world. This situation has prevailed, for example, over long periods in the copper industry. Export of concentrates could command a premium from Japanese or Korean smelters, whereas local construction of smelters and refineries would simply have destroyed the premium value of the raw material by supporting uneconomic downstream investments.

## Distribution between national and regional government

The thrust of economic argument calls for centralization of mineral revenues (taxing powers) at the national or federal level. A central government may be more capable of absorbing uncertainty and fluctuations in mineral revenues because it has a broader tax base than local government in a mineral-producing region. Mineral-producing regions with taxing powers may have less incentive to use non-mineral taxes, thereby distorting the inter-regional tax comparisons for non-mineral activities. At the local level the depletion problem may be more acute than at the national level. Most importantly, a central government can promote equity by redistributing revenue from resource-rich regions to those with fewer resources.

Transfer of major tax-raising powers creates all the major economic difficulties described below. In major resource-rich federations such as Australia or Canada, this is broadly the pattern adopted. Nevertheless, demands and pressures for decentralization of taxing powers to regional or provincial governments can become very strong. If revenue or tax-raising powers must be transferred for political reasons then local governments may be better served by:

- Well-designed transfers designed to support specific expenditure programmes; and
- Rights to all or some of the more stable revenue flows (such as royalties).

Development of mineral projects frequently leads to demands for special fiscal treatment of the area or community where the project is located. In extreme circumstances, these demands (and the lack of a solution) have led to secession movements or civil war (Nigeria, Papua New Guinea). In developed economies (Canada, Australia) the division between states and federal governments is periodically challenged.

Regional or local governments can benefit either by assignment of parts of revenues (royalties, for example) or by allocations of special expenditure programmes. Assignment of revenue instruments creates the political implication of greater local autonomy. Special expenditure programmes may meet local aspirations while better protecting fiscal integrity at the national level. Assignment of either revenue or expenditures to regional and local governments may not meet communal aspirations.

## General guidelines for sharing of benefits

In conclusion, the following general guidelines spring from experience of national/local sharing arrangements:

- National and local consultation should occur over the nature and time of revenue-sharing activities;
- Each level of government should establish its forecast of developments and revenues;
- National governments should pursue local impact studies with input from stakeholders;
- Special revenue-sharing or expenditure programmes must be integrated with overall development activities at the relevant level of government;
- National governments should enter into explicit agreements with each relevant level of government charged with mineral revenue sharing arrangements;
- Participation of local communities in benefits from mineral projects depend on active preparatory social programmes;
- Training programmes should be offered from national government to regional and local tiers for the additional management and planning activities;
- An explicit scheme should be designed for alleviating inequalities among resource-rich and resource-poor regions;
- Mechanisms for political consultation should be established laterally across each tier of government (inter-provincial working groups etc.); and
- The unpredictability of mineral revenues and the reality of resource depletion at individual projects should be emphasized in all these processes.

## FURTHER READING

1. Securing mineral rent for public use – the principles of *mineral tax systems*, including tax administration, provision for abandonment and mine reclamation and provision of infrastructure:

Garnaut, Ross and Anthony Clunies Ross (1983), *Taxation of Mineral Rents*, Clarendon Press, Oxford.

Daniel, Philip (1995) “Evaluating State Participation in Mineral Projects: Equity, Infrastructure and Taxation”, in James M. Otto, editor, *Taxation of Mineral Enterprises*, Graham and Trotman/Martinus Nijhoff, London, pp 165-188.

2. The relationship between *mineral revenues and fiscal policy* – how efficient taxation may create new fiscal management problems and the rules that might be followed:

Auty, Richard and Raymond F. Mikesell (2000), *Sustainable Development in Mineral Economies*, Oxford University Press, London.

Daniel, Philip (1992), “Economic Policy in Mineral-Exporting Countries: What Have We Learned?” in John E. Tilton, editor, *Mineral Wealth and Economic Development*, Resources for the Future, Washington D.C., pp 81-121.

3. The concept of “*permanent income*” (sustainable current spending from mineral revenues);

Gelb, Alan and Associates (1988), *Oil Windfalls: Blessing or Curse?*, Oxford University Press for the World Bank.

4. The use of *special funds* to manage mineral revenues, whether precautionary, stabilizing or saving for future generations:

5. *Savings issues*, Davis, Jeffrey, Rolando Ossowski, James Daniel and Steven Barnett (2001), *Stabilization and Funds for Nonrenewable Resources: Experience and Fiscal Policy Implications*, Occasional Paper 205, International Monetary Fund, Washington DC.

6. Issues in the *distribution of revenues* including support for marginal mines or downstream processing and distribution among different levels of government and local communities:

Ahmad, Ehtisham and Eric Mottu (2002), *Oil Revenue Assignments: Country Experiences and Issues*, Fiscal Affairs Department, International Monetary Fund, May.

Clark, Allen L. and Cook Clark, Jennifer (1999), 'The new reality of mineral development: Social and cultural issues in Asia and Pacific nations, *Resources Policy*, Vol.25, No.3: 189-196.

Oguine, Ike (1999), 'Nigeria's Oil Revenues and Oil Producing Areas, *CEPMLP Internet Journal*, volume 4, article 10 (<http://www.dundee.ac.uk/cepmlp/journal/html/article4-10.html>).



## **MODULE 4**

# **DIVERSIFICATION AND THE CREATION OF HUMAN AND SOCIAL CAPITAL**



## SUMMARY

This module examines the support that investment in mining activity requires. Mining companies have primary responsibility for making investment decisions and overseeing the implementation of a project. However, a successful mining project also requires an appropriate set of management arrangements to support the activity. It is important that the exploitation of a finite mineral resource is undertaken in a manner that maximizes its long-term contribution to the economic and social development of the society that owns the resource.

These developments require the provision of physical infrastructure in the country to support the project: transportation, education, health care, housing, etc. They also require a set of supporting mechanisms of social capital in the form of laws, social interaction and political and economic stability—all requiring the involvement of government to ensure that appropriate support in the form of both physical and social infrastructure is in place. However, the division of responsibilities between company and government requires careful consideration, government, in this case, refers both to the central government of the nation State as well as the appropriate governance systems at the level of the local community. It also assumes an effective working relationship exists between central government and the local communities.

When we consider the need for sustainability in mining projects, we need to introduce the relationship between generations to realize that we are planning for the continuing economic and social development of people over time. Those responsible are required to do so in a manner that sustains and nurtures the physical environment within which this activity takes place. This challenges diverse groups of people to find effective ways to work together to coordinate their activities. There is an internal challenge for governments to find ways to co-ordinate and manage their activities to produce the best outcomes. There is also a challenge for governments to find ways to work with other groups in society to achieve their goals. The effectiveness with which this can be achieved represents one dimension of the quality of social capital that is present in society.

The fact that the location of the mine is determined by the geological endowment introduces an important constraint in that other factors of production (capital and labour) need to be brought to the mine, if they are not already present at that location. This creates the need for a further set of decisions relating to both the short-term and long-term future of the mine. It is argued that many of the problems are best resolved when a frank and realistic appraisal of the mine's long-term contribution to society is undertaken at the outset of the mine's development. The earlier that planning for mine closure is undertaken, the more likely it is that the consequences of mine closure will be ameliorated.

## INTRODUCTION

The economic history of most industrial countries reveals an early reliance on the mineral sector as a significant source of economic growth and development. Concurrent with economic development, however, has been the decline of the mineral sector as a driver of continued and sustained economic development. The circumstances describing these early periods of industrialization have changed, making it uncertain that mineral exploitation, left completely to market forces, will continue to deliver inevitable diversity and prosperity.

This module:

- Evaluates the contribution that the mineral sector can play in economic development;
- Argues that this contribution has to be managed if the benefits to economic growth are to be maximised and the costs in terms of social and environmental impacts are to be minimized;
- Defines the mineral sector and clarifies the linkages within the economy between mining, mineral processing and metal fabrication;
- Seeks to distinguish between “natural” diversification arising through a strengthening and expansion of these mineral sector links and “complete” diversification which occurs when the economy develops in totally unrelated ways; and
- Examines the opportunities for the development of human and social capital in a mining society.

## I. RATIONALE, OPPORTUNITIES AND STRATEGIES FOR DIVERSIFICATION

### Diversification, human capital development and economic performance

All economies have developed from an initial reliance on a limited range of economic activities supported by society and the way it is organized and funded. This specialization makes economies vulnerable to developments in the particular commodity market(s) that they serve.

As economic development progresses, new opportunities to diversify the economy occur. These new opportunities need to be recognized and supported by society so as to make the economy less exposed to the risks associated with over-reliance on a small number of commodities and activities.

Human and social capital needs to be developed further to capitalize on and sustain these opportunities. Continued economic progress requires a positive response to the new challenges and opportunities and the need to develop the capacity to support them.

### Funding diversification from mineral rents: opportunities and constraints

Since mineral deposits are found in specific geographic locations, tension can develop between local and national interests in the exploitation of mineral deposits. The benefits from exploiting these mineral deposits need to be shared among people living in the locality of the mines and the nation as a whole. Appropriate sharing leads to the further need to build social cohesion and to recognize shared values.

At the early stages of economic development the tax base is geared to the dominant economic opportunity, which may be mining. Where this is the case, the mining sector is the primary provider of the government revenue, which underpins more general programmes of economic and social development. These benefits from mining are usually seen as a national resource to be used for the benefit of all. Some of the benefits are felt locally through better job prospects and higher wages and improved economic activity, generally through the application of a

local multiplier. Mining costs are usually borne almost exclusively by the local community in terms of environmental degradation, dispossession, and the cost of having to cope with the influx of an immigrant population. There is a need to reach an appropriate sharing of the costs and benefits of mining between the local community and the nation as a whole.

The government is also faced with the question of how to fund new economic activities if diversification is to be achieved. New economic activities require investment but only yield enhanced tax revenues some time after the new production has begun. Thus, some of the revenue from mining taxation needs to be used to finance these new activities as well as continue to support existing mining activities. This requires an exercise of judgment by the authorities to reach the appropriate balance between support for existing economic activities and the development of new ones. This is more problematic if the new activities take place in new locations to support different communities.

## Identification of diversification opportunities

At the extreme, the economy may be heavily dependent on the production of a single mineral commodity: e.g., Guinea and bauxite; Mauritania and iron ore; Ghana and gold; or Zambia and copper. These nations are heavily dependent on the vagaries of individual commodity markets.

In some cases diversification might mean exploiting other minerals from within a country's geological endowment. In these cases, the dependence on mining would continue but there would be a greater variety of minerals exploited and new opportunities for risk sharing between the different mineral products and mineral markets. There also may be enhanced opportunities to take advantage of the economies of scale.

If diversification of production is attained, opportunities develop to move down the value chain through further processing, ultimately moving into the manufacture of metal-based products. These opportunities are very commodity specific and need to be examined in the context of individual mineral markets and processing technologies. (An interesting and thorough account of such possibilities in an African context is Mintek, et.al., 2000.) The exploitation of this value chain requires investment of scarce resources and careful consideration needs to be given to the best use of limited investment funds. For example, the smelting of some minerals requires high energy consumption and cheap energy might not be available. In other cases even simple fabrication and manufacture may need close connections to customers. Consequently, it may be better to locate processing plants closer to the customers. There will be circumstances where the value chain is better developed nearer to customers than in mineral-producing countries.

There are also possibilities to engage in diversification on a regional basis to maximize gains from economies of scale and perhaps reduce the costs of entry into some of these new activities. There are activities where the sharing of complementary resources (e.g. minerals and energy) makes sense and others where a critical mass has to be developed.

Finally, consideration ought to be given to the case of “complete” diversification where the policy-makers make a decision to move into new areas of economic activity that have no (or very limited) relationship with mining, such as shipping, agriculture, tourism or financial services. In these instances some activities might have limited indirect links to mining (such as shipping), while others might be in potential conflict with mining (such as tourism).

Diversification also has a spatial dimension since economic activity takes place in defined spaces. Policy-makers, therefore, might see diversification in the sub-regional context and explore new activities in new areas of the country. This might be done through promotion of existing activities such as agriculture or mining or through the development of new activities such as tourism.

## The role of the market and the private sector in diversification

Whichever strategy for diversification is chosen, an initial task is to identify what measures are required to foster diversification. Once the measures have been identified, the funding needs associated with the diversification strategy should be ascertained.

The social and economic responsibilities of governments towards the new activities should then be considered. There has recently been a good deal of discussion to identify the limits of state responsibility, especially in the areas of infrastructure provision and support.

The general position is that the State has the responsibility to plan for the circumstances in which economic activity takes place and to secure a sound and stable macroeconomic environment. It also has a responsibility to ensure that supportive infrastructure is in place to benefit the main sectors of the economy, namely, education, healthcare, transportation, etc. This issue will be discussed later in this module.

This does not mean, however, that it is the duty of the State to provide, own and finance this entire infrastructure. Indeed, for the State to do so is likely to conflict with its obligation to provide a stable macroeconomic environment.

Rather, the State needs to examine and appraise a variety of models for the ownership, management and financing of this infrastructure and to reach an appropriate balance of provision. There are a variety of sources of potential funding: central or national government; local government; overseas governments (through foreign aid programmes); international financial institutions (World Bank); and the private sector – both domestic and overseas (firms and banks).

There are other structures for infrastructure provision based on partnerships, cooperatives and communal ownership. There is a need to examine financing, ownership and management in an open way. There are no universal rules to determine the appropriate structure; as it depends on particular circumstances.

Apart from finding ways to allow the State to facilitate the financing of new activities and so strengthen infrastructure provision, participation in new ways to fund existing activities may release the State from some of its existing financial commitments and permit the release of funds to support new and additional activities. The drive for diversification places additional funding requirements on the State, as has already been demonstrated. The State needs to appraise positively any developments that provide new sources of finance, while enabling the government to remain fiscally prudent in its pursuit of macroeconomic stability. Fiscal prudence embraces expenditure decisions as well as revenue management through tax policy. Opportunities to release States from expenditure obligations need to be carefully considered, especially in areas such as physical and social infrastructure provision, which have traditionally been the preserve of governments.

## II. PHYSICAL INFRASTRUCTURE, HUMAN AND SOCIAL CAPITAL

### Physical infrastructure

Physical infrastructure is the investment that supports the mine project without being directly a part of the project investment itself. It includes the transportation system (roads, railways, ports) required to move the mine production to market. It may include the housing required for mineworkers and the educational and health facilities for the population associated with the mine. Clearly, there is a decision to be made to determine the investment that is a necessary part of the project and the investment that is a part of the supporting infrastructure. This is an important decision because the mining company would normally pay for all of the infrastructure directly associated with the mine, whereas the State, directly or indirectly, would be responsible for the provision of appropriate supporting infrastructure. The discussion concerning infrastructure provision and support takes place between the company and the Government when a new mine is planned and an appropriate mining agreement is developed and agreed upon. The agreement on responsibility for the appropriate provision of physical and social infrastructure also has implications for the fiscal provisions of any mining agreement.

Although the mine is at a specific location determined by the geological endowment, decisions still need to be made about the provision of appropriate infrastructure support. In some cases, the mineral deposit may be located in an inhospitable area of the country with very little existing economic activity because of the harsh physical environment. In this case, it may be appropriate to develop as little infrastructure as possible close to the mine and to assume that when the mine is fully depleted, the land will return to its wilderness status. Much of the mine development in Western Australia has been planned on the basis that economic activity at the location of existing mines will not be sustained beyond the life of the mines.

In other cases, a decision may be made to develop a full network of infrastructure aimed at supporting not just the mine but also associated economic activity developed through a diversification strategy. Mining may have been identified as a lead sector for promoting more general economic activity. Note that it is important to make these decisions at the start of mine life because they determine both the amount and the location of infrastructure to be provided.

Whatever the outcome of these deliberations over infrastructure provision, tension will continue. If the infrastructure is provided by the mining company as a part of the project, then the State may still wish to have access to the services of this infrastructure to serve the population not involved in mining. For example, it may want access to schools and health care facilities for non-mining populations. It may still want to use the transport infrastructure to help the agricultural community to gain access to new markets. These demands may conflict with the requirements of the company.

On the other hand, where the State provides the infrastructure, the company may have concerns about the quality of the services the State delivers. In particular, they will want to ensure that there is an adequate supply of healthy, well-trained personnel. With regard to the transportation system, the company will wish to ensure that it operates efficiently to safeguard access to markets for the company's products. They will also be concerned that the capacity of the infrastructure matches the capacity variation in their plans for the mine.

All of these concerns of both the State and the company should be the subject of discussion so that the agreed outcome expressed in the mining agreement and the fiscal arrangements is clear and verifiable. Above all, both parties need to have confidence in the ability of the other party to deliver the services to which it had committed itself.

## Social capital

Social capital is embodied in people and the relationships that make up society through the variety of ways in which people interact with each other. These interactions are represented in a series of institutional structures defining the political, social and economic organization of a society. These structures and institutions need to be carefully designed to meet the political and cultural norms of particular societies. Although ideas and principles relevant to their design can be taken from external societies, they need to be transposed with care to ensure that they meet local needs as well as conforming to international norms.

Democratic and political accountability is an important element of social capital. Thus, social capital embraces the legal system and rule of law as well as the social and economic cohesion of a nation. Economic actors (both foreign and domestic) value the stability that derives from well-developed systems of social capital provision.

There is little doubt that, in comparing competing locations for investment in mining, greater attention is now being paid to governance structures than in the past. The quality of these governance structures is important to foreign investors anxious to safeguard long-term investments, which are typically for thirty years or more. International mining companies are being subjected to increased pressure

from shareholders and other groups to ensure that they operate in countries with good governance structures. The quality of the governance structure is an increasingly important element of the competitive package that a country may offer in seeking to secure inward investment. Although these issues relating to governance structures preoccupy all potential investors, they are especially sensitive in mining and other resource industries.

## Human capital

Human capital is influenced primarily through education and health care and provides the energy, experience and ideas needed to make a difference to a society. The provision of health care and education is often considered as a part of the social capital provision (or social infrastructure), although its contribution is mainly through enhancement of the quality of life of individuals.

It is important to appreciate that, when considering human capital, we are considering ideas in their broadest sense: ideas that contribute to discovering new ways of doing things and identifying new things to be done. These are not just ideas imported from abroad in some international benchmarking exercise but include ideas that also are developed locally to respond to local needs and conditions. These are able to influence all forms of life: political, administrative, cultural and economic. Similarly, we should not view these ideas as being derived narrowly from one sector of the society; commerce, the arts and administration all have the capacity to initiate change.

Ideas are the property of individuals and are owned and controlled by individuals. They are, therefore, as mobile as the individual. One can develop an education system, which is excellent at generating such ideas, but if the society frustrates and curtails the actions of these individuals, they might move elsewhere and take their ideas and energy with them. At the same time, nationals who are encouraged to study abroad have opportunities to live and work in the country of their education and so may not return to their homes. There is a clear risk to financing outstanding talent to study abroad but that is also where the highest levels of education and experience are to be available.

The task is not only to encourage and develop these elements of human capacity but also to design and implement an incentive structure to retain and develop them within the society. Even better would be the creation of an environment that would encourage the immigration of human capital – either through the return of nationals or through the willingness of foreigners to live and work in the country.

## Mobility

There are many local problems that arise in mining through the mobility of populations. The development of new mines often involves the migration of people. Some of this is planned: to bring into the area of the mines the workforce necessary for its construction and then its effective operation. Some of it is unplanned: people who move attracted by the new opportunities for employment or the opportunities for compensation as part of the local community. In addition some of the local population might be displaced (e.g. from agriculture) to make way for the mining activity. This movement may give rise to social problems and tensions, which need to be carefully managed.

Mobility also is a cause of tension within the social fabric in terms of the identification of groups of people as belonging (or not) to the local community. The long life of mines presents particular difficulties in determining entry of migrants and managing the consequences of long-term migration.

Physical infrastructure is much less mobile than people. Mining often takes place in remote locations and requires the costly development of physical infrastructure. At the end of the mine life, government is faced with the choice of seeking to develop different uses for the infrastructure or to abandon it and establish new activities in other places. As we have seen at the planning stage of a project, decisions need to be made about the quantity and quality of infrastructure needed to support a project. There is flexibility as to where some elements of infrastructure should be located. Healthcare, education and housing can be provided at the mine site or at some remote location with workers being transported to and from the mine. Much of the social friction that arises in the mining communities has origins in the movement of people; this area is an important challenge for policy-makers.

## Contribution of social capital to overall economic performance

It is useful, for planning purposes, to distinguish between the different ways in which social capital may contribute to overall economic performance. Since the economy is faced with a scarcity of resources not all opportunities will be utilized. Authorities need to prioritize areas for improvement:

- Improved performance and productivity in existing activities;
- Better use of existing resources – especially infrastructure;
- Exploitation of economic linkages and existing opportunities and recognition of new challenges; and
- Ability to develop new economic activities, possibly in new places.

Social capital enhances performance both through improving the performance of the individual and the way in which that individual interacts with others. Education, for example, has the capacity to achieve both of these aims.

## Maintaining and enhancing social capital: the roles of government, the private sector and civil society

There is a distinction between education and training, and this difference assigns different roles to government and industry with implications for both public and private funding. Training brings immediate benefits to the individual receiving the training (through an opportunity to earn a higher income) and to the industry in which they are employed (through higher productivity). General education brings more general benefits to both the individual (higher pay and higher productivity) and to society (better interaction between individuals and development of stronger institutions). It is often argued that there is a strong case for training to be provided privately, while education is best provided where there is some element of public funding. Nevertheless, education and training are complementary activities and the public and private sectors need to cooperate to develop effective policies.

It is also important that general education be not restricted just to young people, there is a significant need to develop and maintain mechanisms for social cohesion, especially for those societies where there is rapid change and increased movements of people. Societies need to understand the issues that are likely to be the subjects of inquiry.

These considerations assign a significant role to the development of appropriate political institutions (formal and informal) at both national and local levels. They also influence the role of nongovernmental organizations in the decision-making processes. All communities should be involved in the consultation and decision-making processes.

Given the potential for conflict between local and national needs, it is important to develop and maintain effective communications between national and local governments.

The above suggests an urgent need to review institutions of government at all levels to determine their effectiveness. In so doing, the interests of the private sector need to be taken into account; one possible mechanism is tripartite, involving government, civil society and the mining companies. There are a number of models of how this might be developed and it is important that appropriate institutions are evolved to meet local needs and local governance structures.

### III. SUSTAINABLE DEVELOPMENT, POVERTY, AND SUSTAINABLE LIVELIHOODS

#### Meaning of sustainable development to a mineral economy

Sustainable development for a mineral economy requires a particular interpretation. By definition, exploitation of a mineral deposit involves its removal and eventual physical exhaustion. Thus, sustainable development cannot be interpreted in the same way as it would be for a renewable resource where the emphasis would be on maintaining the stock of the resource over the long-term. There has been a lively debate concerning the relevance of the concept of sustainable development to non-renewable resource industries.

MMSD (2002) defines sustainable development as “integrating economic activity with environmental integrity and social concerns”. This integration is at the heart of modern thinking about sustainable development: combining economics with environmental and social concerns. It represents a particular challenge for government since economic, mining, environment and social issues are usually dealt with in separate ministries. Governments need to find ways to co-ordinate policy implementation effectively if they are to meet the challenges posed by sustainability.

The mineral economy has to sustain itself in the long-term. This inevitably involves diversification into (non-mining) sources of economic activity; this should include protection of the environment and meeting the aspirations of the people. Such transformation and diversification goals should be considered early, from the mine development and approval stage.

Furthermore, not only should government consider the physical aspects of mine rehabilitation but it should also consider and plan for economic sustainability beyond the life of the mine. For mines that entered into production without this being undertaken, the process will be more problematic. Such planning needs to be undertaken as soon as possible, to arrive at a realistic assessment of what opportunities may exist.

At whatever point in the life of the mine this assessment is undertaken, it is important that it is undertaken realistically. In particular, since mining often takes place in arid and inhospitable areas in which no other viable economic activity has ever taken place, it will not always be possible or easy to continue economic activities in the same place after the end of the mine-life. This situation does not obviate

the need for planning for life after mining but makes it vital for the population supported directly and indirectly by the mine. The plans may involve the relocation of the population to a more hospitable physical environment, which will permit or encourage continuing economic activity, it also has implications for the provision of infrastructure to support the mine.

This sense of place for economic activity is of critical importance, especially since mining is often conducted by migrant populations. They are made up of a mixture of skilled and unskilled labour. The skilled miners move on a global scale to whichever locations require their skills. They may also have other more generic skills that have an economic value. By contrast, unskilled labour will have fewer opportunities to continue to earn a living and has a reduced awareness of possibilities. The planning of continuing economic opportunities needs to meet the requirements of both of these groups.

## Addressing poverty and promoting sustainable livelihoods

The unskilled part of the population is usually its poorest, with low income levels and limited access to a sustainable livelihood. These groups are poor by any definition. It is with this section of the population in mind that the development of human capacity through education and training becomes vital, enabling them to continue to earn a living beyond the life of the mine. This may focus on providing a skill base to support them in a new place away from the mine site. These new skills may be agricultural or they may meet other macroeconomic needs such as construction or simple manufacturing. The appropriate skills depend in part on the diversification strategy implemented by the government.

Education and retraining need to be provided during the mine's lifetime. It is clearly counteractive to train a workforce in skills that would encourage them to leave during the mine's life and so challenge the economic viability of the mine itself. Yet, if the goals of sustainable development are to be met, people need to have the skills to sustain them and their families, this is especially important for the poor for whom a seamless transition from mining to a new occupation will be difficult to achieve. Significant advance planning to achieve these goals is vital.

This investment in education and training will require resources and, where resources are scarce, governments need to consider their opportunity cost – that is, the competing needs for these resources. It is difficult for governments to allocate resources to meet anticipated future needs, when the current actual needs are so pressing. The choice between meeting current needs and anticipating future needs is at the heart of the matter.

Precautions for the future of new mines could be included into the initial development plans, along with physical and structural support. In the case of existing

mine developments, especially those where closure is imminent, the pressure on resources to deal effectively with the closure is be much more challenging, not just because the time scale is shorter and the resource requirements greater but more critically because of the intensity of the process and the fact that some opportunities will have already been missed.

## Small scale mining and poverty

Not all mining is conducted by large or medium-sized mining countries, whether domestic or foreign. The majority of people employed in mining, in many countries, are small-scale miners. Definitions of small-scale mining abound but generally they relate to people working as individuals or in small groups (often family groups) and with primitive capital equipment. These people are often from the indigenous communities and are usually amongst the poorest people in the nation. Thus, any policies aimed at poverty reduction should address the needs of small-scale miners.

Conflict between small-scale miners and the rest of the industry are commonplace. Small-scale miners are often held responsible with reducing the value of high-grade deposits through their methods of working. They are accused of having poor health and safety records and a disregard for the environmental consequences of their mining. Small-scale miners claim that large mining companies have acquired their mineral rights without offering terms of compensation and they are frequently evicted from their land. These problems are then worsened by the reluctance of large mining companies to employ small-scale miners.

Whatever the rights and wrongs of these conflicts, it is clear that mining industry policy cannot ignore the needs of small-scale miners, and measures will have to be put in place to meet their needs. There have been a variety of suggestions, such as:

- Reservation of land and mineral rights for small-scale mining;
- Access to education and training for small-scale miners to improve production techniques and reduce environmental damage;
- Opportunities for small-scale miners to rework tailings and so improve recovery from the ore body;
- Assistance with marketing to ensure access to markets and fair prices, maybe through the development of cooperatives;
- Improved access to finance to allow the miners to develop and access more modern technology; and
- Infrastructure development to meet the special needs of small-scale miners.

The policies affecting small-scale mining should bring the industry under legal supervision to reducing conflict with the rest of the industry. These policies ought to provide for a sustained small-scale mining industry that could make an important contribution to sustainable development. They may also reduce the migratory behaviour of some of the participants, again bringing stability to the sector.

### Development of practical policies for sustainable development

The development of practical policies to promote sustainable development of a mining community needs to consider both new mines and existing mines. Critical decisions need to be made at the outset in regards to new mines. If it is in a remote location, is the new mine going to be pivotal to the development of this area of the country? In this case it is necessary to anticipate what skills and resources the area will require in the long-term and to try to promote these through the development of the mine, genuinely using it as a lead sector. Alternatively, is it expected that at the end of the mine life, economic activity in the area will cease and the environment returned to its former virgin state? If this is the case the objective should be to try to minimize the expenditure in the area and use the resources saved to promote economic activities in other areas where the long-term future is brighter. The answer to this question will determine the way in which infrastructure is developed and the way in which policies are developed and implemented to support the mine and the mining community. It will also have a critical bearing on where infrastructure is developed

The problems are likely to be more acute where existing mines are concerned, not least because the problems are more urgent, especially if closure is imminent. Again one might need to differentiate between mines in remote locations and mines close to existing settlements offering the possibility of a variety of economic activities. Those close to existing settlements have opportunities to develop linkages with the local economy and try to develop synergies. This may occur through development of the value chain but it may also happen through developing and exploiting more generic skills. Concerning mines away from other economic activities, policy-makers must accept the difficulties and expense of maintaining economic activity, indicating that energies should be devoted to rehabilitating and integrating the mining community back into other viable local economies, when the mine closes. Thus, investment in sustaining the mining community would take place away from the mine site.

## IV. THE POST-MINING FUTURE

### Life after mining – Lessons from early mining economies

In both Europe and North America significant mining communities have experienced mine closure programmes affecting both individual mines and whole deposits. Both continents provide examples where mining communities have had to adapt to changed circumstances and continue to provide livelihoods for former miners. In all these cases, the emphasis is on mine closures that were not planned at the start of the mine project. The authorities had to react to unanticipated consequences. The conclusion from these experiences is that there have been both successes and failures. The lessons learned from these closures are perhaps not too instructive since they were located close to population centers that provided relatively good re-employment opportunities. It is noteworthy that the general macroeconomic environment in which these closures took place was one of vigorous economic growth and naturally diversifying economies.

In the past, the abandonment of mines and mining communities paid little regard to the restoration and rehabilitation of the physical environment. But over the past forty years increasing attention has been paid to these issues. There is still the legacy of previous neglect that has to be dealt with and, in some cases, it is proving both expensive and problematic: expensive because pollution of watercourses and contamination of land require significant investments; problematic because legal liability for damage has not been clearly established. Even where liability is clearly established, the party responsible may not have the financial resources necessary to rectify the problem. These experiences reinforce the importance of dealing with these issues at an early stage in the life of a mining project.

In some cases, where mine developments were relatively remote (e.g. Colorado, USA) the infrastructure has been abandoned and the population has either moved to other areas or has developed other economic activities. However, these communities have almost always seen significant falls in population after the closure of the mines.

Even in cases of closure close to other population centres, mining communities have been abandoned or severely run down. This is true of the coalfields of the eastern United States and Europe. Here, there were growing activities in other sectors of the economy and miners found it relatively easy to be redeployed

in these more buoyant activities. Even so, this was easiest for those in ancillary trades – drivers, electricians, engineers – the skilled miners often were the last to be redeployed and found the adjustment hardest, not least, because in mining their skills carried a wage premium but in their new potential employment, they did not. The necessary adjustment to a relatively or absolutely lower standard of living proved difficult.

#### Box 4.1: Coal and South Wales

The coal mining industry in South Wales collapsed not because the coal was all mined but because the industry could not compete economically with the import of cheaper coal from more efficient locations in the world such as South Africa and Colombia. For one hundred years coal mining had been the biggest employer of labour in the area and the most important industry. Its sudden collapse was not foreseen by government, which was forced to act quickly.

Government responded by actively seeking inward investment to provide new opportunities and new jobs. It was successful in attracting (with grants) inward investment from Japan. This investment was then accompanied by additional funds to retrain and re-skill the labour force through a programme of education and training using both existing educational facilities and new institutions created for the purpose.

A key reason for the success of the scheme was access to government finance. The finance played a key role in securing the new inward investment and facilitating the retraining programmes. Given that the industry was closing because it was uneconomical, there were few opportunities to secure and use funding from within the mining industry.

The supporting infrastructure often changed. This was especially true in the case of education and training. As the mining industries developed, they were supported by a series of schools and colleges that provided a specialist education and training to support the mining industry.

As the industry began to contract, these educational establishments found that there was no longer a demand for their traditional curricula so they responded with new courses meeting the new demands. These often continued with a strong technical focus on engineering and manufacturing, producing skills needed in the growing sectors. They also offered some courses for retraining existing miners but these were not always taken up with enthusiasm. Human capacity building was a central strategy to these efforts.

In some cases individual creativity and entrepreneurship flourished in unexpected ways. For example, following the closure of coalmines in South Wales, one group of miners experimented with a new activity based on art and design. This project has grown into a flourishing business employing significant numbers of locals in an activity far removed from their original employment and utilizing different skills (box 4.1).

These changes required financial and technical support. Teachers needed to be retrained. Infrastructure needed to adapt and facilities had to be relocated. Support for those who wanted to establish new businesses had to be in place. This support was achieved locally and they were also fortunate in that they were able to receive some funding provision from central governments for local initiatives.

## A recent example

A different example is the Moengo bauxite mine in Suriname, which is over 80 years old and developed according to practices that are not acceptable today. The operators of the mine have introduced a programme to deal with the environmental neglect, integrated with a scheme to provide economic livelihood, when the mine is exhausted in about 10 years time. The programme involves the integration of environmental improvement with new developments in agriculture and forestry (box 4.2).

### Box 4.2: Bauxite in Suriname

Bauxite mining in Suriname is long established and the mine at Moengo is over 80 years old, although it is now coming to the end of its natural life. It is expected that within the next decade the mine will be fully depleted and bauxite mining will cease.

Although mining has taken place in conformity with industry standards, for much of its life these standards were lower than those that prevail today. The mine, therefore, had a history of neglect resulting in environmental problems and no clear plan in place to deal with the social and economic consequences of closure.

The operating company (a subsidiary of Alcoa) recently put in place a comprehensive programme to deal with both the environmental and economic consequences of closure. The central part of the programme is to determine those plants and trees that will flourish best in the areas being subjected to rehabilitation. Local people are being trained to undertake these experiments and to develop economic activities using those plants that are most successful.

At the end of the programme, not only should rehabilitation be environmentally successful, having identified those plants that best deliver ecological and economic services, but the local population should also have access to a sustainable future based on agriculture and forestry. The training will have covered not only the agricultural skills but also access to markets for the products and associated ancillary training. Finance is mainly from the company's resources through their environmental rehabilitation programme, although there needs to be some limited support from government.

There has been substantial consultation with the local community over the design and implementation of the programme.

It is important for mining-dependant communities that this sustainable future is anticipated and planned for as soon as possible in the life of the mine. Anticipation and planning require not only intellectual effort in the design of a sustainable life, but also in the provision of resources to enable the planned goals to be achieved. The most important use of these resources is to encourage the development of human capital because human ingenuity is the key resource to guarantee a sustainable future.

## V. A SUSTAINABLE FUTURE

Creating a sustainable future embodies policy challenges in a variety of forms:

- Developing the education and skill base of the population;
- Facilitating the development of new economic activities to provide for a sustainable future;
- Working with communities to develop a common set of values at local and national levels;
- Translating these values into policies for implementation at the appropriate level of government;
- Considering the appropriate role for government and harnessing support from the private sector;
- Ensuring sufficient finance is in place to provide the necessary investment; and
- Planning for sustainability of new mines from the outset while making provision the sustainability for existing mines.

Many of the policies to be followed result from judgments taken in the context of the sustainability arguments. The importance of social structures and governance regimes that promote partnerships between companies, governments and communities (including non-governmental organizations) has been argued. One of the initiatives to promote sustainable development in the natural resources sector is through the Natural Resources Cluster of the Business Partners for Development, which covers a number of international hydrocarbon and mining companies operating in developing countries. The purpose of this programme is to try to identify activities which directly impact on poverty as compared with the alternative actions. There are often a number of potential solutions to the problems faced by the industry, box 4.3 below details some examples of such solutions and compares with alternatives.

### Box 4.3: Tri-Sector Partnership Arrangements in the Natural Resources Cluster/ Business Partners for Development Programme on International Development Targets

#### Basic Infrastructure

- **Sarshatali coal mine, India** – 11km road rehabilitation, designed to provide faster access to local hospital, schools and market for 5 villages (population 5,000) – *alternative: 12 months delay to road improvement and less consideration of community needs for transportation.*

#### Essential Health Care

- **Las Cristinas gold mine, Venezuela** – Health centre constructed in 8 months serving population of 12,000 – *alternative: company may have contributed to the cost of local doctors working in government clinics.*

#### I. Employment and Enterprise Opportunities

- **Konkola Copper Mines, Zambia** – Improved multiplier effect on supply chain through new KCM/IFC/CDC SME Facility – proposed \$US3m venture capital and loan fund offering preferential rates to domestic SMEs – *no alternative to prohibitive loan rates of local banks.*
- **Sarshatali coal mine, India** – Income restoration measures identified from Households Livelihoods Assessment of 10,000 population, with implications for improved household security and community project sustainability – *alternative: vocational training by company but with weak market integration and insufficient community capacity to achieve sustainability.*

#### II. Good Governance

- **Kelian Equatorial Mining, Indonesia** – Outstanding community grievances against company ameliorated through conflict resolution/partnership approach to solving mine closure issues – *alternative: outsourcing to conflict resolution consultants.*

Source: *Business Partners for Development/Natural Resources Cluster, Quarterly Update, No. 8, April to June 2001*

## CONCLUSION

The future development of sustainable mining requires developers to anticipate the finite nature of mining and the constraints imposed by the limited geographical distribution of the deposits. Geological endowment is central to the development of a successful mining industry. Without a high quality mineral deposit there can be no mine. A high quality deposit alone is not sufficient to ensure that there will be a successful mineral industry. A competitive environment is needed in terms of the cost structure of the mine as well as an appropriate support from infrastructure development, governance structures and a stable economy. Physical infrastructure and social and human capital are important elements of this provision.

Where there is a successful mine the finite nature of the resource means that there will be some rate of extraction that would physically deplete the mine. However, in some cases, the mine will close before it is physically depleted because of changes in economic circumstances that make output no longer needed. Therefore, planning for mine closure is an important element of mine development and the earlier that this provision is made, the more successful it is likely to be. Modern mine developments should have economic, social and environmental evaluations, all of which should contemplate and anticipate mine closure and its consequences.

This new thinking about sustainable development goes beyond the physical environment and considers both the economic viability of communities and the social context of economic activities such as mining. Mining is unusual amongst economic activities because of the spatial restrictions on the places where it can take place. Sometimes the deposit is in a place that conflicts with other land uses and economic activities (agriculture, tourism or manufacturing) but sometimes the deposit is in a place that is inhospitable and there is no competing economic or social activity. In either of these circumstances the sustainable future for economic activity, with or without mining, needs to be effectively evaluated before mining begins.

Where mining is taking place without such evaluation, urgent action needs to be taken to ensure that plans are in place to deal with the situation at the end of the mine life. This is an important issue for internal co-ordination within government, and for co-ordination between government and civil society. At the same time these actions need to ensure that the economic viability of the mine is preserved for as long as is possible. The amelioration of social structures to achieve these aims will represent significant development of a country's social capital.

## REFERENCES AND SUGGESTIONS FOR FURTHER READING

- Auty, R. and Mikesell, R.F., 1998. *Sustainable Development in the Mineral Economies*, Clarendon Press, Oxford.
- Auty, R. and Warhurst, A., 1993. "Sustainable Development in Mineral Exporting Economies", *Resources Policy*, 19 (1).
- Acquah, P.C. and Boeteng, A., 2000. "Planning for Mine Closure: Some Case studies in Ghana, *Minerals & Energy*", 15 (1), 23-30.
- Hilson, Gavin, 2002. "Small-scale Mining and its Socio-economic Impact in Developing Countries", 26 (1), 3-13.
- Humphreys, David, 2000. "A Business Perspective on Community Relations in Mining", *Resources Policy*, 26 (3), 127-131.
- Humphreys, David, 2001. "Mining in the Knowledge-Based Economy", *Minerals & Energy*, 16 (3), 3-8.
- Kambani, Stephens M., 2000. "Policy and Strategy Options for Small-Scale Mining Development in Zambia," *Minerals & Energy*, 15 (3), 22-30.
- McPhail, Kathryn and Davy, Aiden, 1998. "Integrating Social Concerns into Private Sector Decisionmaking: A Review of Corporate Practices in the Mining, Oil, and Gas Sectors", World Bank Discussion Paper No. 384, World Bank, Washington.
- Mate, Kwabena, 2001. "Capacity-Building and Policy Networking for Sustainable Development", *Minerals & Energy*, 16 (2), 3-25.
- Mining, Minerals and Sustainable Development (MMSD), 2002. Final Report, International Institute for Environment and Development and World Business Council for Sustainable Development.
- Mintek, Minerals and Energy Policy Centre, SKM Consulting Associates Ltd, and Minerals Resources Services Ltd, 2000. Study on Opportunities for Value Addition to Minerals, for the SADC Mining Co-ordinating Unit.
- Ostensson, O., 1997. "Mining and the Environment: the Economic Agenda", *Industry and the Environment*, 20 (4), 20-31.
- Otto, James M. and Cordes, John (Eds.), 2000. "Sustainable development and the Future of Mineral Investment", United Nations Environment Programme.
- UNCTAD, 1997. "Management of Commodity Resources in the Context of Sustainable Development: Governance Issues for the Mineral Sector", United Nations Conference on Trade and Development, Geneva.

## **MODULE 5**

# **THE PROCESS OF MINERAL POLICY DESIGN AND IMPLEMENTATION IN AFRICA**



## SUMMARY

The mining sector is an engine of economic reconstruction and growth in many African countries. The sector provides many benefits including revenue to government for general economic development. Mineral policy has therefore concentrated on ensuring that the sector generates adequate revenues for economic growth.

During the past two decades, there have been global debates and agreements on issues concerning democracy, human rights, public participation, globalization and many others. These have shaped policy changes that not only expect mining-sector activities to contribute broadly and directly to economic and social sectors, but also that they should proactively minimize negative effects on society and on the environment. This evolution has necessitated a fresh look at how policies are developed.

This module suggests a process for developing a mineral policy that takes the emerging issues into account and that involves the affected stakeholders. The process has been used successfully in southern Africa and, given the common challenges and opportunities across Africa, it can be used elsewhere on the continent.

This process requires time and government must provide an enabling environment. In addition, it requires allocation of adequate financial resources and capacity building of stakeholders for their effective engagement. To meet these requirements, governments, international organizations and nongovernmental organizations (NGOs) need to make appropriate interventions.



## INTRODUCTION

Mineral policy is the sum of government decisions and actions that influence the mineral sector and the ways in which it affects the economy and society in general. Mineral policy elements are diverse and continually changing and are more than the body of laws and regulations that directly influence mineral exploitation, extraction and processing. Other factors include export-import permits, regional development funds, pollution control laws, taxation and social development programmes.<sup>1</sup>

Over the last century, the mining sector has provided foreign exchange earnings, tax receipts and investment inflows, with varying results. The sector has also contributed to infrastructure development, including power generation and transport, even though most of this was captive to mining activities.

In Africa, control of minerals has generally rested in the hands of private international companies and not governments or local private individuals or firms. Because of the enclave nature of operations, the African mining sector has strong links to external economies but has weak local linkages. The sector is still characterized by mineral exploration and exports of raw ore. Most beneficial minerals processing and manufacturing occur at the upper end of the value-added chain and are carried out in developed nations. Moreover, with the increasing number of developing countries producing mineral commodities, the competition for markets in developed countries is fierce. At the same time, developed country tariff rates increase significantly for finished products, discouraging investment in downstream processing and manufacturing in developing countries.

Ownership of mineral production in Africa has shaped the characteristics of production at various stages.<sup>2</sup> Types of ownership include:

- Local private ownership, constrained by lack of capital;
- Private ownership, usually by large companies exhibiting enclave-style development that failed to contribute adequately to economic growth in host economies;

<sup>1</sup> DEMR (1974).

<sup>2</sup> Maponga, O. and Maxwell, P. (2001).

- State ownership, that emphasized inward policies aimed at directing returns to socially and economically desirable objectives, but which was also characterized by inadequate re-investment in the sector, political interference, unfavorable investment climate, general political and economic instability, and lack of technical and human skills. These problems led to the poor economic performance of many mineral-producing countries; and
- Current private ownership, expected to provide viable alternatives to the failures of state ownerships, and designed to comply with the general structural adjustments of emerging economies.

It was the global crisis and decline in metal prices in the 1980s that prompted African countries to examine ways of attracting new investment for mineral exploration and development. Mate<sup>3</sup> observed that structural adjustment programmes (SAPs) were implemented in response to the problems of debt and economic underperformance. Their emphasis on export-led recovery and the generation of fiscal and foreign revenues was accompanied by the adoption of legislation and mechanisms that sought to improve the conditions for foreign direct investment (FDI). Various studies have been done and recommendations made for actions that enable and stimulate private sector mineral investment. Currently, private ownership is characterized by the modernization of mining regimes, development of new formal mineral policies, statements and international agreements backed by appropriate legislation.

However, global exploration expenditures are declining. The 2002 estimated world expenditure was \$US1.9 billion, decreasing from a high of \$5.2 billion in 1997, just before the Bre-X scandal.<sup>4,5</sup> One of the major factors in the declining exploration expenditure is the effect of mergers. The total expenditure of a merged company is noted to be less than the sum of expenditures of individual companies.

Despite declining global exploration expenditure, Africa attracted 12.5% of worldwide expenditure (\$293.1 million) in 2000 and 14% (\$257 million) in 2002. These figures compare favourably with those of Canada in the same period while other regions increased very marginally, stagnated or declined. This increase in Africa's percentage share of exploration was attributed to the interest in diamonds and platinum group metals. This strong interest in exploiting Africa's mineral wealth makes it imperative that effective and comprehensive mineral policies and systems be in place.

<sup>3</sup> Mate, K. (2001).

<sup>4</sup> Bre-X Scandal: In 1997 a company falsified prospecting results, which overvalued the potential of a gold deposit in the Philippines. The share price escalated and many investors lost large sums of money when the scam was uncovered. Investor confidence in the mining sector declined.

<sup>5</sup> Mining Journal, March 7, 2003, supplement, p. 7.

This module suggests an ordered process through which African countries can develop their mineral policies. The guidelines offered aim at ensuring that the sector contributes to overall national development. The process also advocates consideration of the sector as a whole rather than in a piecemeal fashion.

An effective mineral policy is formulated with the view that the mining sector is a major engine of economic reconstruction and growth, even for those countries that do not have a tradition in mining. This critical role calls for serious attention to policy development for the sector. Past events, experiences and unique African contexts must be studied and understood to make meaningful policy proposals for the future. From this foundation, a participatory process will ensure a balanced product.

As regimes shift from a command structure to use of participatory approaches, stakeholder influence rises. The World Bank<sup>6</sup> defines participation as the process through which stakeholders influence and share control over priority setting, policy-making, resource allocations and access to public goods and services. Participatory processes require civic engagement in the strategy process, exchanging information with other stakeholders, increased transparency in decision-making, improved government accountability to the people and, as a result, increased efficiency in overall governance and economic development activities.

In the minerals sector, eliciting the participation of a variety of stakeholders started from the late 1980s and continued through the 1990s. In many cases, it was in response to specific issues rather than to initiatives for ‘corporate social responsibility’. It is now standard practice to expect engagement by all stakeholders in minerals policy development.

This new approach to national-level policy development allows for consideration of many viewpoints. Policy construction in southern Africa has demonstrated that key principles and elements of mineral policy are best articulated when there are inputs and feedback from all relevant stakeholders. Such participatory involvement is achieved when adequate and timely information is made available to all the stakeholders.

Another factor of Africa’s policy development that should be taken into account and maximized is the need for collaboration for integration. Because African countries have so much in common, the use of a common or a similar procedure to construct a mineral policy that deals with both external and local issues invariably leads to similar solutions. Such a cohesive approach to policy-making would be a useful basis for subregional and continental integration.

<sup>6</sup> World Bank (2001).

Factors affecting policy formulation are sometimes locally driven but others arise in response to dynamic changes happening worldwide. An example is the current global standard of democratization for good governance. Studies by Batton and Mattes<sup>7</sup> have noted that authoritarian regimes have generally been discarded in Africa. Africans are embracing newfound or rekindled freedom of choice in leadership and government. In addition, the thawing of relations between East and West has been accompanied by diminishing central planning. In response to the global trends and the conditionalities of multilateral and bilateral financial institutions, almost all countries in Africa claim to have adopted market forces as the hallmark and foundation of their economic strategies. Yet, the reality is that market-oriented policies have generally lost support due to unemployment and the income gaps created, resulting in political instability when democracy is undermined by lack of results.

Policy formulation in Africa has also been constrained by corruption. John Bray<sup>8</sup> describes corruption succinctly. Corruption in public bodies is abuse of public position for private or sectional gain, and flourishes most where politicians and officials exercise power without accountability. It distorts economic development by rewarding the most dishonest rather than the most competent. Governments are conscious that a reputation for high levels of corruption discourages foreign investment, undermines investment satisfaction and erodes confidence in state institutions by both foreign investors and citizens of the country.

Another issue in mineral policy formulation in Africa is the magnitude and spread of the impact of HIV/AIDS on social and economic infrastructure.<sup>9</sup> Erosion of the human resource base, diversion of meagre resources to health services and lack of ability to deal with the scourge impact seriously not only on AIDS patients and their families but also on overall national economic health. At the mine operation level, poor health among miners has enormous implications. These include loss in productivity, absenteeism and high employee turnover. The cost of doing business escalates, not only through production losses but also due to more frequent training of new staff, increased medical and insurance costs, and so on.

<sup>7</sup> Batton and Mattes (1999).

<sup>8</sup> Bray, J. (1999).

<sup>9</sup> The Foundation for Democracy in Africa (2002).

# I. PRINCIPLES OF POLICY DESIGN AND IMPLEMENTATION

## Definition of policy

Jamil Rabah<sup>10</sup> summarizes that the purpose of politics is to make life better: “So we want to make life better within our own traditions and within our own society, but resources are limited and we have to make choices, to establish priorities”. Policy is a vision, aspiration and a statement of intent or a strategic plan. It is a course of action based on societal values, followed in dealing with a problem or matter of concern, and includes predicting results.<sup>11</sup>

## Role of policy

Policy communicates what society values. It provides guidelines for decisions and actions that are taken in the day-to-day administration of government. In this way, it provides certainty and expectation. In addition, it allows for planning by both the government and the affected entities. The absence of policy leads to decisions and actions that may be reactive, contradictory, random and arbitrary.<sup>12</sup> The policy becomes the basis of planned work, accountability and evaluation. In government, it is an enabling and guiding framework in all sectors and at all levels.

Moharir<sup>13</sup> points out three main differences in policy-making in developing countries from that in developed countries. Firstly, economic performance in developed countries has generally been satisfactory as they can allocate resources to one sector without necessarily affecting others. In contrast, performance in developing countries has not been encouraging; it is compounded by high expectations of the electorates driven by democracy, and limited resources at the disposal of government. Secondly, in developed countries various interest groups play differing roles, with NGOs providing checks and balances. In developing countries the processes are still fairly centralized, with little participation and inputs from stakeholders (other than government) in policy-making. As an example, NGOs are generally not as influential as in developed countries. Thirdly, due

<sup>10</sup> Rabah, J. (1997).

<sup>11</sup> Leonard D. & Thomas J. (1995).

<sup>12</sup> Leonard D. & Thomas J. (1995).

<sup>13</sup> Moharir, V.V. (1991).

to the historical, political and economic situation in developing countries, the criteria for policy options may be based on different factors than would normally apply in developed countries. Policy-making in developing countries thus has a different set of challenges and requires innovative approaches.

## Sustainable development goals and mineral policy

The World Commission on Environment and Development (WCED), commonly known as Brundtland Commission,<sup>14</sup> defined sustainable development, as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”. The core principle is to improve human well-being. This definition generates three themes. The first is sustainability of environment, both in terms of the quality and the stock of natural resources. The second is economic sustainability of human living standards. The third is social and cultural sustainability, referring to the disproportionate distribution of costs associated with mineral development and the role in decision-making processes that various stakeholders make. The report of the Mining, Minerals, and Sustainable Development (MMSD) project (2002)<sup>15</sup> states:

*“A sustainable development framework should be defined only in part in terms of social, environmental, and economic objectives. It should also be defined by the decision-making processes it promotes: the mechanisms for making trade-offs it identifies in ways that are widely regarded as fair. New principles for governance are required.”*

In line with the global efforts towards sustainable development, the mineral sector is expected to fully contribute towards its achievement. As in any other sector, the key to sustainable development in the mineral sector lies in the process of identifying and organizing the various stakeholders to work together in developing policy. This process will enhance stakeholder inputs, enhance community development and form financial and operational partnerships with the rest of the stakeholders. Communities are singled out because mineral development activities normally take place in rural areas and they suffer most of the environmental and social costs with debatable benefits.

<sup>14</sup> Government of Canada (2002).

<sup>15</sup> MMSD Report (2002), p23.

## Implementation

Implementation can only be achieved with the right institutional structures, and sufficient capacity of the stakeholders, implying that capacities must be built where they are insufficient. The government needs the right attitude and has to translate the policy into a work plan. The work plan will normally have deadlines and will identify the entities or persons responsible for results. This plan enables progress to be monitored and corrections made if there are differences between targets and results.

The achievement of sustainability goals within the framework of a mineral policy depends a great deal on the political will of the government. Demonstration of political will includes the allocation of resources to plan and implement policy statements. This demonstration will involve the creation of indicators for performance and assignment of responsibilities for implementation of set targets.

From the government perspective, what is needed is to improve capacity for delivery and to help managing the partnerships between stakeholders. Such capacity will allow audits to be undertaken, that involve collection of information from all stakeholders through interviews, questionnaires, focus groups, discussions and other forms.

## Characteristics

Policy development is a multidisciplinary process involving many different players at different levels.<sup>16</sup> The issues involved will be political, social, economic, scientific or technological. These will include land access, security of tenure, fiscal systems, environmental concerns, mine closure, local participation, and many others. Where various stakeholders contribute to a policy, they are more likely to aspire to effectiveness, transparency, economic efficiency and benefits resulting from the policy to which they have contributed.

Policy should not be seen as made by politicians or government professionals, but by a number of actors whose interests are taken into account. This shared process of policy development avoids a top-down approach where decisions and power are generated at the top and forced on all stakeholders. The multidisciplinary approach advocated here allows for consideration of social or cultural values, the role of science and technology and the role of communities, various interest groups and, above all, the changing responsibility of mining companies. What then are the key considerations in achieving a “good” mineral policy?

<sup>16</sup> Bourk M.J. (2002).

## II. KEY CONSIDERATIONS FOR GOOD MINERAL POLICY

### Consideration of the mineral sector's contribution to the broader economy

Governments are the entities that set up the agendas for national development. Broad national aspirations defined by government include:<sup>17,18</sup>

- Growth and the capacities to achieve this;
- Distribution of the benefits of growth to all citizens;
- Diversification of the economy;
- Improvement in the quality of life;
- Eradication of poverty; and
- Preservation of the environment.

As the mining sector is one of many sectors forming the economy, it is expected to fit into this broad national economy and contribute to the achievement of national goals. At the sector level, the goals can be distilled as earning foreign exchange, contributing to tax revenue, creating employment, providing skills training, value adding to mined minerals, providing materials, and so on. It is this contribution by the sector that propels the legislators in Parliament to appropriate the requisite resources for the development and management of the sector. It is essential, therefore, that national goals and objectives are articulated and taken into account, in order to put the mineral policy into a viable context.

### Taking the interests of various stakeholders into account

Stakeholders are defined as those groups and individuals who either affect, or are affected by, the activities of an organization.<sup>19</sup> In the broadest sense, they include government decision-makers, local, national and global community groups, land-owners, neighbours, public interest groups, suppliers, contractors, consumers,

<sup>17</sup> Radetzki, M. (1980).

<sup>18</sup> Moharir, V.V. (1991).

<sup>19</sup> Epps, J. and Brett, A. (2000).

insurers, financial lending institutions, industry associations, environmental interest groups, media, research and educational institutions, and many others. The aim of engaging stakeholders is to balance all the concerns and needs. The government has the primary responsibility for facilitating dialogue and creating an environment suitable for all stakeholders to participate fully.

Among all stakeholders, communities are in the weakest position because they have limited power, and limited economic and political influence, yet their members reside where mineral resources occur and they often have to bear the brunt of the negative effects of mining operations. The bulk of Africa is rural based and if development should filter to the majority then these are the people whose contribution is vital for effective results. Examples abound where communities have been marginalized in project development and have become hostile and violent.

The traditional policy-making model by government has been “*decide-announce-defend*”.<sup>20</sup> This model is no longer acceptable. Government still plays a significant role, especially through its Ministry responsible for mineral affairs. The Ministry must have influence over policy-making and provide direction.

In some countries, there are no formal mineral policies, but mere policy statements. In most of these cases, the government concentrates on updating specific areas, for example, the fiscal regime. In this way, it aims to create competitive regimes while exacting rents for distribution to other parts of the economy. The emerging trends in policy construction reflect holistic consideration of the broader issues taken together and policy linkages at all stages of articulation and implementation.

## Use of consultative and participatory approaches

Against the background of global attention to good, participatory governance, governments have to enable, organize, and participate in multi-stakeholder processes for policy reform.<sup>21</sup> One of the key approaches to involving many participants is to show stakeholders how they can influence the policy process and how it is in their interest to do so while the policy is being developed. This process could begin with a press release to inform the various stakeholders of the intention and justification for the development of a mineral policy. A newsletter or newspaper outlining the process to be undertaken and the expectation of stakeholder inputs would follow. Periodic reminders at each milestone, stating where the process came from, where it has reached and where it is going, the actors and

<sup>20</sup> Keyes, R.J. (1995).

<sup>21</sup> MMSD Report (2002).

various players taking responsibility for events all help to inform stakeholders and the general public and keep up the momentum. At this point, NGOs can play a big role in educating local communities on the mineral development issues to encourage and prepare them to engage in the process when the time comes for them to do so.

The consultative and participatory approach provides an opportunity for stakeholders to appreciate issues and concerns, and select the best approaches from available options. This approach enhances the acceptability and effectiveness of the policy implementation phase. To begin with, it ensures that the policy meets the needs and aspirations of stakeholders; empowers stakeholders through ownership of the policy; and increases the likelihood that the policy will be effective.

The consultative and participatory approach can also be used in monitoring and evaluating policy delivery, for example, by collecting information from stakeholders and not only from the government staff implementing the policy. The aim would be to determine the effects, results, and long-term outcomes of the policy. Where necessary, changes and adjustments should be made to achieve the desired objectives.

## Consideration of the policy environment

The Constitution of the country sets the tone of the policy environment. It is the supreme law of the country. It is stable and rarely changes as only a special process can change it. It defines general trends of national policy, which must conform to the Constitution. In the same way and for the same reasons, any mineral policy must support the principles of the Constitution. It must also define and set medium- to long-term mining policy objectives.<sup>22</sup> Since the mining sector is only part of the national economy, its policy must also be consistent with other sectoral policies. Development of an acceptable mineral policy cannot and should not be undertaken in isolation. It is also important that representatives from other affected government Ministries also fully participate in the exercise.

A further aspect of the role of law in this process is that legislation is needed to implement the policy. Mining laws developed have to be aligned with policy statements and specific regulations covering discretionary legal aspects. Thus, these laws and regulations must also be consistent with those in other sectors of the economy.

<sup>22</sup> Cawood, F.T. (2001).

## Consideration of other relevant factors

Policy changes in developing countries significantly affect the investment climate. Changes viewed as liberalized incentives have attracted increased FDI inflows. The investment climate in a country needs to be measured against international best practice. Such a report would involve a review of mineral policies and legislation in selected countries in order to suggest options for consideration in the mineral policy under formulation or review. There has to be careful selection of the countries used for comparison, based on agreed criteria. The report should describe and consider information that is critical to the investor, including economic policy, taxation policy, royalty regime and procedures for mineral rights administration. This report should be the subject of debate and discussion before any policy recommendations are set.

Another area of concern affecting investment attraction is compliance with international health, safety, environment and other sector-specific issues. While over-regulation may deter investment, the global markets for financing mineral resource projects expect enforcement of regulations for responsible environmental performance. Furthermore, some international NGOs exert pressure on producers that do not comply with operational norms.

## Unique circumstances of a country

Any factors unique to a country should be taken into consideration because circumstances do influence a country's approach and response to the policy-formulation process. Some of these factors include:

- Access to availability of finance for mineral investment. If finance is lacking, policies have to take the fierce competition for international investment resources into account. In addition, new policies may need to be put in place to establish local capital markets or diverting funds from traditional investment destinations.
- Level of mineral development. This will normally determine the extent to which a mining tradition exists. It would be safe to say that countries that have no tradition in mining would normally go further to provide open opportunities to attract new mining investment.
- Wealth of geological endowment and the mineral inventory. These are the two factors that first attract investors. Again, it is the existence of these mineral resources that motivates a country to develop a mineral policy. For example, the absence of good geological information would motivate a country to concentrate on policies that attract companies to undertake grassroots exploration.

- Technical skills. These are a prerequisite for undertaking mining operations. A deficiency in skills calls for policies that have both short- and long-term impact. Short-term solutions deal with ease of access to expatriate skills, while long-term solutions call for training and skills development for nationals.
- Availability of local markets. This has a strong bearing on the level of local beneficiation. Conversely, limited local markets imply adherence to international market demands, with their inherent barriers. Some mineral-producing countries prescribe the level of beneficiation required, but at the same time, it is also appropriate to spell out how far specialized mining companies are expected to go downstream.
- Underdeveloped infrastructure. This will compel investments in utilities to service individual mines. The issue opens up debate on whether mining operations should remain enclaves or whether they should become integrated into local, national or regional government development programmes. Ideally, if an operation cannot support the total cost of production, it is not viable.
- Economic contribution of the mining sector. This affects the resources allocated to the sector by government and also influences investor perception and confidence. In countries where the sector is just struggling to emerge, there are normally no general plans for the sector in development agendas. Furthermore, budgetary allocation for preliminary surveys and skills development to manage the sector are inadequate. Policy development in this context must take into account the resources needed for such 'grassroots' efforts.
- Non-renewability of resources, market-determined prices and limited market shares. These elements need pragmatic, innovative policy options. Despite the fact that exploration is normally an ongoing exercise during mining, there is always a limit to resource availability at the mine site. Attention to detail at each phase of mining in terms of costs and benefits is needed. The product prices and market share (which is limited) determine how much the country will benefit from mineral extraction. These issues are not particular to a country but impinge directly on stakeholder expectations, including the belief that a new mine will permanently solve many problems. The revenue streams from mining translate as only a temporary reprieve to poverty problems, unless benefits are captured and invested wisely.

## Response to dynamic changes in the external environment

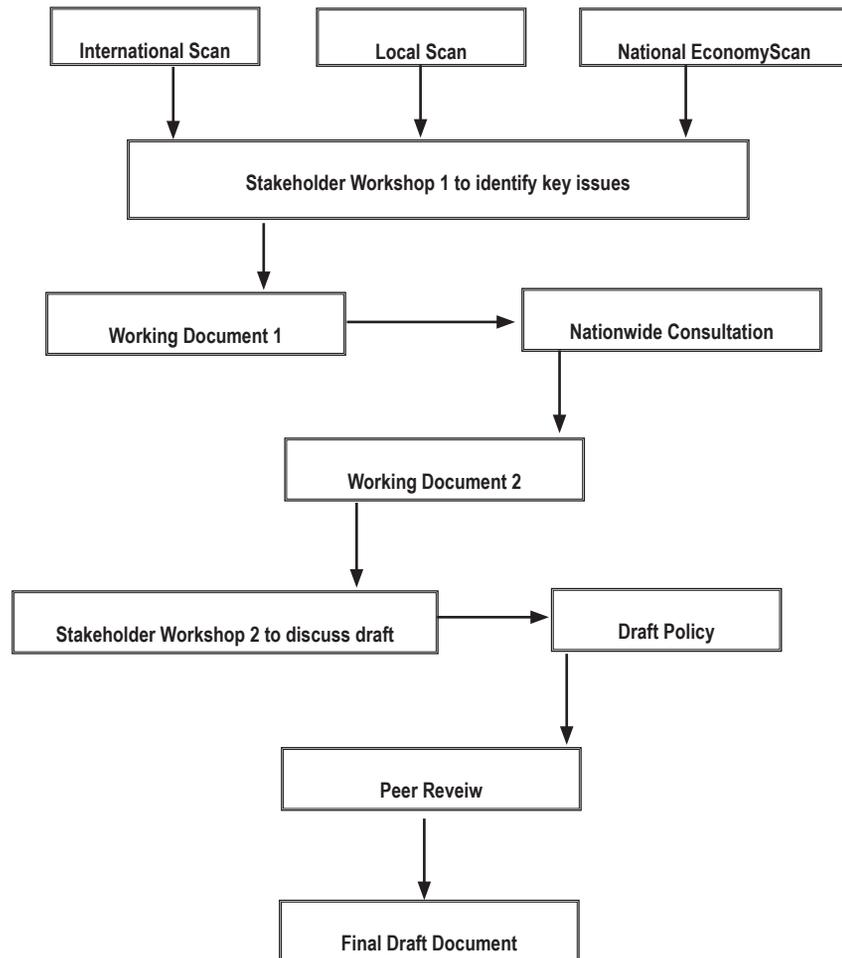
The mineral industry is a global village where individual producer countries are inhabitants. They attract capital from the international market place and sell products in the same market. Therefore external considerations include:

- Behaviour of mineral markets and volatility of prices. Fluctuating mineral prices are determined by global macroeconomic trends, where consumers rather than producers set the price of most mineral commodities. In turn, these demands for minerals are based on the demand for end products such as automobiles. Competition among producers has reinforced this trend toward greater competition in most mineral markets.
- Global economic forces, corporate regulations, and taxation. Mining companies show no real affinity for any particular country. Thus, national governments need to analyse and understand the evolving investment trends and needs of international mining companies facing expanded investment opportunities. This analysis can be used to benchmark the policy interventions needed.
- Changing business practices. The world of business is dynamic, and currently there are high expectations that mining businesses, over and above economic profit considerations, must consider environmental and community-level practices, social responsibilities and standards being imposed by globalization.

### III. LESSONS FROM POLICY CONSTRUCTION IN SOUTHERN AFRICA

A model of policy construction is shown in figure 5.1 below. The following subsections describe the various steps.

Fig 5.1 The Policy pProcess



## Data gathering and generation of background papers

Access to information is a prerequisite if the public is to participate productively, and the information must be appropriate to subsequent decision-making. Broad-based knowledge is necessary for a wide stakeholder audience of different backgrounds.

The initial phase comprises the generation of background information on the local economy, the local mining industry and the international mining industry. These documents aim to assess the status of issues and can lead to informed stakeholder engagement. They should include:

### International scan

An international scan captures all issues, trends, opportunities and threats likely to impact on the future well-being and competitiveness of the country's mining industry. It alerts stakeholders to the competitive global situation they face. It also provides information on social, environmental, economic, and political issues that enable the national mining sector to set benchmarks in relation to international trends and challenges.

### Local mining scan

A local mining scan is a document that reviews the current status of the mining sector of the country. The issues include the resource base, exploration and mining activities, management of the sector, human resources, environmental, safety and health, social issues, legislation, and so on. The document also includes experiences, failures and successes of previous policies and actions.

### National economy scan

The national scan provides an overview of the national economy, covering the Constitution, development policies, national objectives and goals, strategies, performance of the constituent sectors, business practices and the role of the mineral sector. Such a review should focus on the underpinning role of the mineral sector and should not be considered in isolation but as an integral part of the economy contributing to national development goals.

## Identification of various stakeholders

The range of stakeholders may be extended endlessly, but for purposes of developing a mineral policy, a cut-off point is needed. The following are examples of stakeholders and their differing, even conflicting expectations:

- Financial institutions and investors. They require an enabling environment that ensures security and a reasonable return on investment;
- National governments. These need economic growth based on the generation of employment opportunities and good standards for both labour and the general public. In addition, separate government departments or Ministries need to ensure consistency with sector policies and national legislation;
- Local communities. These expect to see benefits arising from sector activities and to participate in them;
- NGOs. They expect, advocate and are involved in, delivery of programmes of action;
- Regional organizations. They also need to participate meaningfully in programmes from the policy-formulation stages;
- The donor community. They need guidelines for delivering assistance and expect to see positive results;
- Research and educational institutions. These can be involved in research, training and human resource development;
- Small-scale miners. They would like to see an enabling environment because this is the segment in which most of the indigenous people are able to participate; and
- The industry. The mining sector itself and industrial affiliates would like to see impediments and concerns addressed so that the industry can remain globally competitive and profitable.

## Workshop for synthesis of key issues

Select representatives from the various stakeholder groups, outlined above, attend an initial workshop (Stakeholder Workshop 1, shown in figure 5.1). These participants would be informed people, able to contribute from their own knowledge as well as represent their constituencies. For effectiveness, the number of participants should be limited to fifty. The background documents should be made available to the participants in good time to enable them to read and prepare for the discussions. The Workshop should begin with a discussion of each document, to ensure that stakeholders understand the issues and any gray areas can be clarified.

The Workshop, through a process of smaller working groups and combined plenary sessions, can rigorously analyse the background papers. The purpose is to identify the issues, challenges, opportunities and threats facing the sector.

## Situation analysis

The situation analysis for the sector is achieved by applying the Strengths, Weaknesses, Opportunities, and Threats (SWOT) process on the external environment and the internal profile, using the international, local mining scan and national economy scans respectively. The analysis also heavily draws on the individual and collective expertise of the Stakeholder Workshop participants for inputs. Strengths and Weaknesses (SW) should provide information about the present situation in the country. Opportunities and Threats (OT) should depict the situation both inside and outside the country. The situation analysis identifies what strengths exist to meet the opportunities, threats for the future, and the weaknesses highlighted. It enables the participants to identify the major current and emerging social, technological, economic, environmental and political issues (STEEP) process as well as the key driving forces and challenges facing the sector. This analysis should provide not only a picture of the current situation in the sector, but should also package the key issues into themes for further analysis.

## Scenario building and use

Scenarios are stories about the possible future unfolding of events; they describe what could happen rather than what will or should happen when different variables come into play. Scenarios focus on possible future potential realities from which it is possible to identify new opportunities and threats that may require new solutions. In addition, they are useful in testing the “robustness” of solutions, policies and strategies. Their use improves the quality of strategic thinking; generates new ideas about the future and anticipates and recognizes change.

Scenarios may include the following four options:

- **Globalization:** For this option, the prevailing scenario is one where the government’s role and national identity shrink, the private sector grows and becomes dominant, open-market strategies prevail, economic policy facilitates private sector activities and high-quality services are available to those who can pay. However, the quality of public services gradually decreases.
- **Partial globalization:** In this context, the country wants global alignment but on its own terms. Because developing countries tend to view the developed world as profit-oriented at the expense of people, they favour a proactive economic policy, with markets only partly open and following a strategic plan.
- **Regionalization:** In this scenario, the focus is on the whole region, encouraging development of regional social contracts, with a directed plan for incremental development and formulation of regional socio-economic policies.

- Nationalization: For this option, the government focuses on domestic level activities and is not a significant player either regionally or globally, resulting in a case of national isolation.

The Stakeholder Workshop would brainstorm on each of these scenarios. By assuming that each scenario is occurring in turn, participants consider what important OT the sector faces. New opportunities, threats and solutions when required could be identified. In addition, participants test the robustness of the developed solutions against each of the four scenarios and fine-tune them to better meet the challenges of the four possible future situations.

The final process would be for the participants to consolidate the issues and solutions into themes. These themes then form the foundation and strategic direction for the development of a mineral policy document. Themes may vary in number depending on the outcomes and include issues such as human resources, small-scale mining, environment and others.

## The consultative stage and the White Paper

The identified key issues, clustered into themes, are included in the discussion document (Working Document 1, shown in figure 5.1) for wider consultation for inputs from various stakeholders, including comments, concerns and new issues that the initial Workshop may have overlooked. The submissions are in written form following specific instructions. The consultative process should apply to individuals, various types of organizations, the business sector, trade unions and labour organizations, educational institutions, government Ministries and so on.

For the silent, often ignored communities, local workshops have to be undertaken to enable verbal communication on the issues, and explanations and comments are recorded. Independent bodies, preferably NGOs, would normally facilitate these workshops.

It is vitally important that each theme is explained and the issues raised are examined, so that viable policy options can be suggested and formulated. This process enables engagement by communities and voicing of their concerns. Representatives from the Ministry responsible for mining should be present to explain the existing government practice and position on each of the themes.

The written submissions and the recorded inputs raised by communities should then be integrated into the document, used to enrich the themes, key issues and policy solutions suggested as they become that would be the subject of further consultation. The modified document

(Working Document 2, in figure 5.1) is then distributed to various stakeholders for preparation of the next workshop.

A second workshop (Stakeholder Workshop 2, shown in figure 5.1) with a wider participation of stakeholders than the first, and including all those that were consulted, should follow. The purpose of Workshop 2 is to discuss the various views and concerns further and reach consensus on most key issues. The output from this Workshop forms the basis of a White Paper (Draft Policy, seen in figure 5.1).

The draft policy document should then be further subjected to various processes. A key follow-up component is critical examination of the policy statements, to see if they adequately address each of the objectives. In this way, establishment of linkages to national goals is ensured. Another component is a peer-review process of consultations with selected individuals and other Ministries before government can finally submit the Draft Policy to Parliament.

The product will be a multitude of policy statements in all key areas or themes. This is characteristic of participatory processes since stakeholders are given an opportunity to think and express their views without limitation. Many stakeholders assume that government will have no resource constraints for implementation of the policy and contribute their ideas accordingly.

## Post-policy development

After adoption, the responsibility for implementation of the policy reverts back to the Ministry responsible for mining. A good policy document needs to be followed up with an implementation plan and lack of this is as bad as having no policy at all. All stakeholders want to know how the policy statements will be put into effect, especially when problems arise. While governments may feel that stakeholder involvement is not needed at the post-policy development stage it may be beneficial to use the same participatory process to develop an implementation plan and strategy.

The implementation of policy statements will most likely require varying types of action depending upon the nature of the proposal. These types of actions require different timeframes to obtain results, depending on resources and practicality. They may include:

- Mere change in administrative arrangements, priorities or techniques;
- Further studies and proposals for new actions;
- Amending existing legislation; and
- Promulgating new or additional legislation.

Whatever the outcomes of an implementation plan, the programme must assign responsibilities for measured, quantified deliverables and matching timeframes for implementation. It is through these assignments that work contracts for senior staff can be designed and efforts made to ensure that the policy delivers its expected contribution to national goals.

A clearly designed implementation programme with a time-defined scale and deliverables sets an operational framework that makes periodic auditing easy. Again, there is a lot of scope for getting stakeholders to participate in audits, so that the exercise is not left only to the staff of the Ministry responsible for mining.

## V. INSTITUTIONAL CAPACITY AND POLICY SUSTAINABILITY

### Characteristics of the policy process

Some people feel that the participatory method merely shifts responsibility from government to the public and that what the public puts forward is not based on scientific study or reasoning. They still believe that the public, particularly communities with little education, do not have much to offer. Experience has shown that there is great appreciation and gratitude at the grassroots or community level when the people are given an opportunity to contribute to the debate. Above all, a lot of local knowledge and experience is gained from community contributions.

The process is certainly time consuming and can seem endless since it may not be possible to have full consensus on all issues. Considering the fact that the policy being developed has a long-term perspective, patience must be exercised in an effort to garner consensus.

The process also requires resources and this need could run counter to the current government tendency to cut back on expenditures. Limited resources might affect ability to engage effectively with all stakeholders and to support the programmes emanating from the exercise. Since stakeholders must participate, there is no alternative but to make resources available to ensure that this happens.

Stakeholder participation assumes that stakeholders have adequate capacity to engage effectively in debating issues and subsequent policy development. Their engagement will not be effective unless they have access to adequate and correct information that is presented in a way that eases understanding. Government, with its wisdom, power and resources, has the primary responsibility for making this happen. The NGO sector would be an ideal medium for delivering this effort. In the development of the South African mineral policy, the Kwagga programme funded by the Canadian International Development Agency (CIDA) played a significant role in capacity building.

Public participation allows people to contribute their thoughts and opinions in an unhindered way and assumes that government will have adequate resources to deliver. The result is that there are many policy statements that are proposed for action. The use of public participation as a process itself raises popular expectations, which puts democracies at risk if actions are not satisfactory. It is therefore

important, bearing this in mind, that stakeholders are consulted and participate in developing an implementation plan. In this way, they can appreciate the extent of policy coverage, participate in setting of priorities and are more able to understand and accept the limitations of government resources. Their exclusion always confirms the general perception that governments make promises but do not deliver.

## Traditional structures

Ministries responsible for mineral affairs usually have departments of mines and geological surveys. These departments deal mostly with the technical aspects of the sector – supervision of exploration and mining activities, and promotion of the sector. They concern themselves mostly with export-led growth and assume that the revenues accruing to Central Government will be equitably distributed to all. They do not always concern themselves with broader sustainable development issues.

Other Ministries deal with environmental and related social issues and effective cooperation and coordination are sometimes lacking or are inadequate for timely decision-making, when authorizations or actions are required from the different institutions and departments.

## Structures as determined by policy outcomes

A wide variety of policies and structures results from unfettered contributions from participatory processes. Apart from the traditional thrust of policies normally advocated by governments to attract investment, many others hinge around the sustainable development concept that mineral development must be people-centred. Some of the outcomes include:

- Decentralization so that mineral administration is closer to the people, including representation of communities in policy-formulation institutions. Through decentralization, the consent of traditional leaders/land-owners has to be sought when considering prospecting grants and mining licences. This reflects the need for local consultations on access to mineral rights, surface ownership and decision-making processes in traditional set-ups.
- Mining extension services similar to agricultural services, since on-site support needs continuous attention. Sometimes the mining administration is not as easily visible in comparison to other sectors.
- An independent environmental agency that focuses specifically on mining environmental concerns. The mining sector has not yet reversed its historical image of irresponsibility over the decades.

- An environmental trust fund to which all licence holders must make contributions. This fund ensures that the negative effects of mining will be corrected at the end of mining operations.
- A national marketing agency for local producers and a one-stop shop information centre attached to it. This type of information centre removes the inconvenience and cost of contacting several entities or institutions with mandates over mining activities.
- Community development funds, benefiting whole communities. Communities believe that they know what they need and that they should be given an opportunity to decide how they can better themselves and want resources allocated accordingly.
- Mechanisms for providing small-scale mining training programmes. This level is where the bulk of the mining population operate. Training for Trainers programmes are needed, so that community representatives can train others with a view to educating whole communities on the mining issues.
- Promotion of regional small-scale mining forums. These forums will function for the purpose of sharing knowledge and best practices.
- Government responsible for safety nets and other actions to ease trauma created by mine closure. Government is urged to take over infrastructure, adapt it to social use and provide continuity. In short, the public is requesting a policy that integrates development planning with mining even where the private sector dominates the latter. This policy will ensure sustainable livelihoods of the local communities and therefore the country as a whole.

## Capacity strengthening

The realm of mineral policy formulation has widened with the advent of open markets, democratization, human rights advocacy and the global sustainable development agenda. The role of government is to provide guidance (knowledge and information) based on accumulated local and international data on the sector. It should also provide the enabling environment in which the various stakeholders can participate and effectively engage in mineral policy development.

Governments, therefore, need to strengthen capacity for not only technical management of the sector, but for other areas as well. This will require additional related skills including mineral investment analysis, mineral law, environmental management, sustainable development, and communication and facilitation skills.

It is easier task to create an enabling environment for industry, labour, academia and such related organized groups. However, local-community masses with

scarce resources and limited political influence that need special attention. Their environment is endowed with mineral resources but have deep-rooted land ownership rights issues. Although human rights and democracy are taking root, abject poverty and other underdevelopment effects are predominant.

Governments, international organizations and NGOs (both local and international) must support participatory processes that include training. Various training avenues are needed, to educate and build capacity to resolve mining issues at community level, to enable grassroots engagement in the dialogue.

## V. CONCLUSION

The mining sector will continue to be an important component of many African economies. It will still be regarded as an engine of economic recovery and growth long into the foreseeable future.

Policy development in Africa reflects the changing global trends and shifts towards democratization, open markets, human rights, sustainable development, good governance, public participation and social equity. Global standards now demand equitable sharing of the costs and benefits of mineral development, through public engagement in policy development. The top-down approach, from government to stakeholders is being discontinued.

This paper has presented a process for developing a mineral policy that comprehensively takes into account the various factors affecting the sector and that engages the relevant policy-formulation stakeholders. The process has been used in Southern Africa and since there are similar challenges and opportunities on the rest of the continent, the same process and best practices could be replicated in other countries. Such an approach could lead to policy harmonization at the regional level, thus contributing to continental integration.

The government role in facilitating mineral policy design and formulation in Africa is crucial. To begin with, governments must provide the necessary enabling environment in which various stakeholders are permitted to engage in policy dialogues. To this effect, governments must allocate adequate financial resources and time. Finally, for effective engagement of the relevant stakeholders, adequate and timely information must be also provided. The need for capacity building, particularly for those stakeholders who are weak, socially, economically and politically, should not be underestimated.

## REFERENCES

- Batton and Mattes, 1999: "Support for Democracy in Africa: Intrinsic or instrumental", <http://www.afrobarometer.org/abseries.html>
- Bourk M.J., 2002: "The Policy Formulation Process", <http://www.tomw.net.au/uso/process.html>
- Bray, J., 1999: "Business in Africa", pp15-17.
- Cawood, F.T., 2001: "Economic Implications of the Mineral Development Draft Bill". Paper presented to a seminar at Minerals and Energy Education Training Institute, South Africa.
- DACST, 1997: "The National Research and Technology Foresight Project", 2020 MACROSCENARIOS.
- DEMR, 1974: "Towards a Mineral Policy for Canada: Opportunities for Choice", p11.
- Epps, J. and Brett, A., 2000: "Engaging Stakeholders" in *Sustainable Development and the Future of Mineral Investment*. J.M. Otto and J. Corde (eds) pp 1-5.
- Foundation for Democracy in Africa 2002. "HIV-AIDS Epidemic in Africa", World Bank 2001 Poverty Reduction Strategy 22. Sourcebook  
<http://www.worldbank.org/poverty/strategies/chapters/particip/orgpart.htm>
- Government of Canada 2002: "What is Sustainable Development?" [http://www.sdinfo.gc.ca/what\\_is\\_sd/index\\_e.cfm](http://www.sdinfo.gc.ca/what_is_sd/index_e.cfm)
- <http://democracy-africa.org>
- Keyes, R.J., 1995: "Defining Mineral Policy: Complex Dynamics and Current Trends". Mining Association of Canada.
- Leonard D. and Thomas J., 1995: "What is Policy?" Paper presented to a workshop by Centre for Development and Enterprise on Building Policy Skills in South Africa, Johannesburg.
- Maponga, O. and Maxwell, P., 2001: "The Fall and Rise of African Mining" in *Minerals and Energy* Vol.16. No.3.
- Mate, K. 2001: "Capacity Building and Policy Networking for Sustainable Development" in *Minerals and Energy* Vol. 16, No. 2, p5.
- MEPC, 2001 Documents:
- "Towards Developing a Strategy for the SADC Mining Sector."
  - "An International Scan of the Mining Industry."

— “The Namibia Mining Environment Investment Report.”

— Working Papers, “Minerals Policy of Namibia.”

*Mining Journal*: Nov. 09, 2001: “Exploration budgets down again”, pp 353-355.

MMSD Report, 2002: Breaking New Ground.

Moharir, V.V., 1991: “Methodology for Policy Analysis in Developing Countries”. Paper presented to annual meeting of the International Association of Schools and Institutes of Public Administration, Working Group on Education and Training in Public Policy, Malaysia.

Rabah, J., 1997: “Policy Formulation and Implementation – Problem Analysis”  
[http://www.passia.org/special\\_projects/97/policyanalysis/part2-10.htm](http://www.passia.org/special_projects/97/policyanalysis/part2-10.htm)

Radetzki, M. 1980: “LDC Policies Towards Foreign Mineral Investors” in *Mining For Development in the Third World*.



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