



# Minerals and Africa's Development

The International Study Group Report on  
Africa's Mineral Regimes



Economic Commission for Africa



African Union

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Africa's Mineral Regimes



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# Table of Contents

<b>Acronyms</b>	<b>ix</b>
<b>Foreword</b>	<b>xiii</b>
<b>Acknowledgements</b>	<b>xiii</b>
<b>Executive Summary</b>	<b>1</b>
<b>1. Introduction</b>	<b>5</b>
<b>2. Africa's minerals: history and search for direction</b>	<b>9</b>
<b>Evolution of African mining</b>	<b>11</b>
Mining on the eve of the colonial period	11
The colonial creation of export mining	12
The role of the colonial state in African mining	13
After the Second World War	13
The early post-colonial decades	14
<b>A more liberal space for foreign investment</b>	<b>15</b>
What was needed in the 1990s?	15
Results of reform—mixed at best	17
From past results to renewed approaches	19
<b>3. Global trends</b>	<b>21</b>
<b>Demand for mineral commodities</b>	<b>21</b>
Global distribution of demand	21
Demand conclusions for the future	24
<b>Supply of mineral commodities</b>	<b>26</b>
Global distribution of supply	26
Supply conclusions for the future	29
<b>Exploration and mine development</b>	<b>30</b>
<b>Profiles and control of mining companies</b>	<b>33</b>

Prices and profits	34
Leading global policy initiatives	36
The China story	36
Old hands: The United States, EU and Japan	38
India	40
Latin America	42
Policy implications	43
<b>4. Mining in Africa: managing the impacts</b>	<b>45</b>
The environmental and social impacts of mining	46
The environmental impacts	46
The social impacts	49
Regulating the environmental and social impacts of mining	50
Protected areas	50
Environmental and social impact assessments	52
Public participation	54
Access to information	57
Addressing the minerals and conflicts link	58
Mining and human rights	59
Mining and employment	61
Resource productivity	63
Policy implications	64
<b>5. Artisanal and Small-Scale Mining in Africa</b>	<b>67</b>
Definition	67
The global position	68
Profile in Africa	68
Challenges in Africa	70
Policy challenges	70
Technical capacity and access to appropriate technology	70
Lack of financing	71
Inadequate access to exploration and mining areas	72
Difficulties in accessing markets	72
Conflict minerals	72
Women's and child labour issues	74
Self-reinforcing nature of challenges	75
Addressing the challenges: Some country initiatives	75
Policy implications	79

## **6. Corporate Social responsibility initiatives 81**

Evolution of CSR as a tenet of sustainable development	82
Intergovernmental processes and frameworks	82
Other initiatives and frameworks	84
Government legislation	85
Promoting social and community development	85
CSR and development effectiveness	87
Policy implications	88

## **7. Capture, Management and Sharing of Mineral Revenue 91**

Capturing revenue	91
Overview	91
Mineral revenue and tax instruments	92
Tax stabilization	95
Optimizing mineral revenue and linkages through price discovery	95
Managing revenue	96
Revenue impacts	96
Revenue transparency	97
Sharing revenue among local communities	98
Policy implications	99

## **8. Optimizing Mineral-based Linkages 101**

Conceptualizing and quantifying mineral-based linkages	102
Types of linkages	102
Quantifying mineral sector impacts	107
Changing perspectives on mineral-based linkages in Africa	107
Constraints to developing linkages continent-wide	108
Poor resource infrastructure	109
Constraints to trade	109
Inhibitors to downstream value addition	110
Impediments to securing upstream inputs	110
Human resource deficiencies	110
Spatial linkages	111
Policy implications	112

## **9. International Trade and Investment Issues 115**

The context	116
Tariffs	116
Non-tariff barriers	118

Export taxes	119
Foreign investment regulation and domestic policy space	121
Performance requirements	122
Performance requirements and BITs	123
Performance requirements in EPAs	125
Expropriation provisions	126
Investor–state dispute settlement	126
Policy implications	127

## **10. Mineral Management: The Power of Institutions** 129

Rethinking the role of institutions to meet development objectives	129
Institutions promoting mineral-based linkages	130
Traditional institutional roles in mining	133
Negotiating contracts	134
Regulating government discretion in awarding mineral rights	136
Other governance challenges	137
Policy implications	138

## **11. Regional and Sub-regional Strategies in Mineral Policy Harmonization** 141

The integration landscape in Africa	142
Moves to harmonize sub-regional mineral policies	146
Southern African Development Community	146
Economic Community of West African States	146
West African Economic and Monetary Union	147
East African Community	148
Mano River Union	148
Lessons and policy options	148

## **12. Looking ahead: Key Challenges and Policy Messages** 151

Africa's mining legacy and the search for a new development approach	151
Optimizing mineral linkages needs a conscious policy approach	151
The global mining industry: opportunities still exist	152
Boosting the contribution from artisanal and small-scale mining	152
Preventing and managing mining impacts	153
Strengthening corporate social responsibility	153
Improving governance	153
Paying attention to implications of international trade and investment regimes	154
Harnessing the benefits of regional cooperation and integration	154
Final words	154

## **References 155**

## **Appendices 169**

Appendix A: Members of ISG and principal contributors	169
Appendix B :Summary report on the Big Table meeting, 2007	171
Appendix C: Terms of reference of the ISG	177
Appendix D: Extracts from the Lagos Plan of Action for the Economic Development of Africa (1980 -2000)	182
Appendix E: Main mineral deposits of Africa	184
Appendix F: U.S. Mineral Materials Ranked by Net Import Reliance - 2010	186
Appendix G: State/private control of mining of selected minerals 1975-2006	188
Appendix H: State/private control of refining of selected minerals 1975-2006	189
Appendix I: Environmental and Social issues in mining regimes in selected African countries	191
Appendix J: Canadian Roundtable Process on CSR and the Canadian Extractive Industries in Developing Countries	204
Appendix K: Extracts from YAOUNDE VISION	206



# Acronyms

AfDB	Africa Development Bank
AICD	Australian Institute of Company Directors
AMP	Africa Mining Partnership
AMV	Africa Mining Vision
ANZCERTA	Australia New Zealand Closer Economic Agreement
APRM	Africa Peer Review Mechanism
ASM	Artisanal and Small-scale Mining
AUC	Africa Union Commission
BIT	Bilateral Investment Treaty
BMFOM	Bureau Minier de la France d’Outre-Mer
BNP	Banque Nationale de Paris
CARICOM	Caribbean Community
CARIFORUM	Caribbean Forum
CASM	Communities and Small-scale Mining
CDM	Clean Development Mechanism
CIC	China Investment Corporation
CMC	Community Mining Code
CMP	Common Mining Policy
CODESRIA	Council for the Development of Social Science Research in Africa
COMESA	Common Market for Eastern and Southern Africa
CRS	Corporate Social Responsibility
CSI	Corporate Social Investment
CSIS	Centre for Strategic and International Studies
CSN	Companhia Siderúrgica Nacional
DDI	Diverging Diamond Interchange
EAC	East Africa Community
EC	European Commission
ECOWAS	Economic Community of West African States
ECSC	European Coal and Steel Community
EIA	Environmental Impact Assessment
EMDP	ECOWAS Mineral Development Policy
EPA	Economic Partnership Agreement
FDI	Foreign Direct Investment
FTA	Free Trade Area

GATS	General Agreement in Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GEODESA	Geo-science Data Compilation in Eastern and Southern Africa
HSRC	Human Sciences Research Council
ICEM	International Federation of Chemical, Energy, Mine and General Workers' Union
ICGLR	International Conference on the Great Lakes Region
ICMM	International Council for Mining and Metals
IFC	International Finance Corporation
IIED	International Institute for Environment and Development
ILO	International Labour Organization
ISG	International Study Group
IUCN	International Union for the Conservation of Nature and Natural Resources
JNMC	Jinchuan Group Ltd
JOGMEC	Japanese Oil, Gas and Metals National Corporation
JP	John Pierpont
KPCS	Kimberly Process Certification Scheme
LDCs	Least Developed Countries
LSM	Large-scale Mining
MDGs	Millennium Development Goals
MIFERMA	Societe Anonyme des Mines de Fer de Mauritanie
MIP	Minimum Integration Programme
MMSD	Mining, Minerals and Sustainable Development
MRU	Mano River Union
NAFTA	North America Free Trade Agreement
NAMA	Non-Agricultural Market Access
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
ODI	Overseas Development Institute
OECD	Organization for Economic Cooperation and Development
PANFACT	Pan-African Factual Database Management
PGM	Platinum Group Metal
PMG	Parliamentary Monitoring Group
PTA	Preferential Trade Agreement
R&D	Research and Development
RBS	Royal Bank of Scotland
REACH	Regulatory Framework for the Registration, Evaluation and Authorization of Chemicals
REC	Regional Economic Community
RMCs	Regional Member Countries
RRT	Resource Rent Tax
RSDIP	Regional SDI programme
SACU	Southern African Customs Union
SADC	Southern African Development Community
SARW	Southern African Resources Watch
SDI	Spatial Development Initiative
SEAMIC	Southern and Eastern Africa Mineral Centre

SIA	Social Impact Assessment
SME	Small and Medium Enterprises
SRSG	Special Representative of the UN Secretary-General
TNC	Trans National Companies
TRIMs	Agreement on Trade Related Investment Measures
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
UNRISD	United Nations Research Institute for Social Development
US	United States
USGS	U.S. Geological Survey
WAEMU	West African Economic and Monetary Union
WTO	World Trade Organization
ZCCM	Zambia Consolidated Copper Mines

# Foreword

**THE DEVELOPMENT OF** mineral resources can have very different implications, and consequences, for communities, governments, the mine developers themselves and even countries and regions in which mining activities taking place. A comparative perspective reveals not only the large divergence in the interests of various stakeholders, but the wide range of conditions under which mineral exploitation takes place, especially in Africa.

The many competing interests, and outcomes, suggest the importance of a shared vision to deliberately, and proactively, create the policy space which secures the interests of stakeholders at all levels. In Africa, for far too long, it has been taken as given that there are always losers and winners in mineral extraction processes. Certainly the broader interests of some stakeholders, notably communities and perhaps even states, have been far from secure. Africa's high levels of poverty, its severe infrastructural deficits, and its continuing weak voice in negotiating mineral development contracts are ample evidence of this.

The Africa Mining Vision, adopted by the Heads of State and Government in February 2009, seeks to change all this. It advocates for "Transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development". At the centre of the Vision is a developmental state that integrates the mining sector into broader social and economic developmental processes. This is an attempt not only to address the sector's isolation from mainstream social and economic activities, but to create win-win outcomes for all stakeholders.

Among the many lessons to be learnt from the Nordic countries is that resource-based industrialization is possible. But Africa's socio-economic environment is very different. Africa faces numerous entry barriers and a dearth of capacity. Yet fundamentally, Africa has to shift focus from simply mineral extraction to much broader developmental imperatives in which mineral policy integrates with development policy. This is the central thinking in this report - that the continent's vast mineral resources can play a transformative role in Africa's development only if it builds appropriate social and economic development linkages that meet national and regional developmental objectives. Such linkages are of course diverse - whether this is with regard to improving equity and transparency in revenue collection and distribution; integrating small scale mining into rural economies, thus improving people's livelihoods; or linking mineral extraction to infrastructure development and the manufacture of products that support societal needs.

It is in this regard that the Africa Mining Vision is deliberately ambitious. This is what is required to change the path and destiny of Africa's industrialization and fight against poverty. The realization of the Vision hinges on strong political will and a commitment to developing strong capable mineral management systems and institutions; an astute understanding of Africa's relative advantages in the global mineral value chain, maximizing the benefits of regional integration, and building robust partnerships.

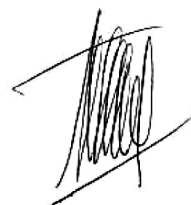
The circumstances for achieving the Vision are auspicious – minerals are experiencing a sustained surge in prices – demand for minerals has soared and this has created competition for Africa's mineral commodities. Still purposeful ownership and leadership over policy actions remain key, particularly in creating fair and equitable fiscal and investment regimes that maximize the developmental benefits of mineral resources exploitation in Africa.

We have no doubt in our minds that the ingredients and conditions needed to bring about the required structural

change in Africa's mineral sector are well identified in this report. The fundamental role of anyone of us keen to see Africa develop is to support the successful implementation of the policy recommendations of the report. Unfortunately, just before this report went to print, Her Excellency Mrs Elisabeth Tankeu, the Commissioner for Trade and Industry at the African Union Commission, who provided visionary leadership, passion and commitment to the work of the ISG and would have been proud of this report passed away. We therefore wish to dedicate it to her memory.



Abdoulie Jannet  
United Nations  
Under-Secretary-General and  
Executive Secretary of UNECA



Jean Ping  
Chairperson  
African Union Commission

# Acknowledgements

**THIS REPORT WAS** prepared by the International Study Group (ISG) under the overall leadership and guidance of Mr Abdoulie Janneh, the Under Secretary General of the United Nations and Executive Secretary of ECA and H E Dr Jean Ping, Chairperson of the African Union Commission (AUC).

The work was supervised by the late H E Mrs Elisabeth Tankeu, then Commissioner for Trade and Industry at the African Union Commission (AUC), Abdalla Hamdok, former Director of the Regional Integration, Trade and Infrastructure Division (RITD) and current Deputy Executive Secretary of UNECA, Joseph Atta-Mensah, also former Director of RITD and currently Director of the Office of Strategic Planning and Programme Management, Stephen Karingi, Director of RITD, Antonio Pedro, Director of the ECA Sub regional Office for East Africa (ECA-EA), Ayoup Elrashidi Zaid, Senior Policy Officer at the AUC, and Wilfred C Lombe, Chief of Infrastructure and Natural Resources, RITD. The names of the ISG members are indicated in Appendix A.

Several members of the ISG participated in revising the report and deserve special mention. These are Fui Tsikata of Reindorf Chambers in Ghana, who also was the Chief Coordinator for the ISG work, Yao Graham the Coordinator of Third World Network - Africa, Professor. Bonnie Campbell of the University of Quebec, Canada, Magnus Ericsson, Chairman of the Raw Materials Group in Sweden, Lois Hooge Senior Policy Advisor, Natural Resources

Canada based in South Africa, Paul Jourdan a Consultant from South Africa, Ms. Ana Elizabeth Bastida of CEPMLP University of Dundee, Nancy Kgengweyane, Regional Advisor on Natural Resources Development at ECA, Marit Kitaw from the ECA-EA Office, Oliver Maponga from the ECA-WA Office. Tarik Kassa, Aster Gebremariam, Mkhululi N'cube, and Saul Kavonic provided support to the ISG at various stages of the work and their assistance is acknowledged.

A number of people contributed to the various chapters and these are also indicated in Appendix A. Their inputs are gratefully acknowledged. The report benefitted from two consultative meetings, the first held in Accra Ghana, 25-27 November, 2009; and the second held in Kigali, Rwanda from 2-4 December 2009. The report was further validated at a final workshop held in Addis Ababa, Ethiopia from 20-22 October 2010 at which participants made many useful suggestions and recommendations which enriched the final report. Participants at both the consultative and validation workshops comprised a broad range of stakeholders including regional economic communities (RECs), government policy makers, civil society, the private sector and academia. While the individual participants are too numerous to list, their individual and collective contributions are no less appreciated.

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Finally, the preparation of the report benefitted from the generous grant from the Swedish Government, whose financial assistance is gratefully acknowledged.

# Executive Summary

**THIS REPORT ON** Africa's mineral development regimes was prepared by the International Study Group (ISG) established in 2007 by the United Nations Economic Commission for Africa (UNECA). It analyses African mining from a number of complementary perspectives, driven by a search for new directions based on the African Mining Vision (AMV) which African leaders adopted in 2009. The processes which led to this Report started in 2007, at the peak of the expansion in global demand and rise in the prices of minerals and metals before the onset of the global financial and economic crisis in 2008. Even as the surge in demand and prices fuelled the best period of growth in Africa for thirty years, the developments also provoked reflections about the experiences of two decades of continuous expansion of mining across Africa.

The report is based on the central premise of the African Mining vision (AMV) that the structural transformation of African economies is “an essential component of any long-term strategy to ensure the attainment of the Millennium Development Goals (MDGs) ..., eradicate poverty and underpin sustainable growth and development”, and that this requires “a strategy ... rooted in the utilization of Africa's significant resource assets”. It recognizes that a central challenge which must be addressed by any long term strategy is how to overcome the historical structural deficiencies of the mining industry. Mining's contribution as a supplier of strategic minerals to industrialized countries, the focus of policy on those minerals that play that role, the inadequate returns to the continent and the enclave nature of mining industries have, since colonial

times, been and remain central features of the African landscape today. Early post colonial attempts to transform the colonial bequest of an enclave industry failed for a variety of reasons discussed in the Report.

From the late 1980s, the inauguration of extensive liberalizing reforms of regulatory and legal frameworks, on the basis of World Bank prescriptions, drew a line under the nationalist reform efforts. Over the past two decades, the favourable environment the reforms created aided the revival of foreign investment in Africa's mining industry. While foreign investment has regenerated and expanded mineral production and exports, its contribution to social and economic development objectives has been far less certain and has even been contested in many countries. In many mineral-rich African countries a very visible civil society movement, protesting about the costs and questioning the benefits of the revitalized mining sectors, has emerged.

The report examines the costs and benefits of Africa's contemporary mining regimes and offers proposals about how to optimize the continent's benefits from the exploitation of its mineral resources while reducing the direct and indirect costs and negative impacts. These issues are grouped and discussed in chapters on: the history of mining in Africa; current global trends and the opportunities and challenges they pose; how best to manage the environmental, social and human rights impacts of mining; how to better support and integrate artisanal and small scale mining; the nature and status of corporate



social responsibility initiatives; capture, management and sharing of mineral revenues; the optimization of mineral-based linkages; the implications of international trade and investments rules for mineral-based industrialization; the important role of institutions and regional strategies for mineral policy harmonization.

A number of chapters discuss a range of issues that have a bearing on how African countries approach the challenge of moving the mining industry beyond a focus on extracting and exporting raw minerals and sharing the resultant revenue to it being a strategic part of a process of industrialization and structural transformation. A number of these issues are highlighted below:

- The building of mineral-based linkages is central to the transformation of the mining enclave. However as the report makes clear there are a number of difficulties such as trade and regional market constraints and the limited availability of requisite technical skills. Other challenges include limited access of domestic business sectors to capital, the centralized strategies of resource extraction multinational firms and the poor state and stock of infrastructure across the continent. The steps that can aid successful linkage development are also discussed. These include the creation of an enabling business environment and of capable public sector institutions. Also needed are policies that set conditions and provide incentives for investors to structure projects in ways that deepen the links between mining projects and the rest of national and regional economies;
- The current international trade and investment regime constrains the ability of African countries to use the full range of instruments that were exploited by now industrialized countries as part of their industrialization strategies. While pointing out what space still exists within the international trade and investment regime for policies that promote industrialization, the report draws attention to the capacity challenges that African countries face in the negotiation of international agreements and how these can be addressed;
- Progress with African regional integration and the creation of regional and continental economic spaces out of the many small economies will remove some of the intra-African barriers to mineral-based industrialization. Regional markets will also facilitate the development of linkages based on minerals capable of domestic and regional use by enhancing the viability of enterprises producing for national and regional markets;
- The AMV recognizes Spatial Development Initiatives (SDIs) through natural resource-based Development Corridors (DCs) as representing a particular regional approach to mining linkages development with the region defined by economic potential rather than political boundaries. Preliminary studies have identified thirteen possible DCs, such as the Gulf of Guinea Coastal, Maghreb Coastal and Bas Congo, which could link a number of countries through investment focused in integrated economic development projects which encourage value added processing and optimize the utilization of infrastructure and which can also catalyse other sectors; and
- The global trends of growing investment in Africa's mining industry and demand for Africa's minerals from Asian and other countries, particularly China and India, is seen as an opportunity which could be exploited by African countries for more development-oriented partnerships in mineral production and value added processing, development of infrastructure as well as the establishment of related industries. Favourable outcomes are however not guaranteed and much depends on how clearly African countries define their interests and replace competition for investments with cooperation in the face of the new "scramble for Africa". The importance of creating a level playing field in the sector anchored on a development-oriented minerals sector is emphasized in the report.

The social and environmental impacts of mineral exploitation have been the focus of protests and the flashpoint for conflicts between mining firms and communities in mining areas. The report acknowledges that while progress has been made in environmental impact assessment,

major weaknesses and deficiencies still persist, particularly in evaluating and regulating less visible environmental impacts while strategic impact assessment is at a rudimentary phase across the continent. There is usually a mismatch between the expression of public participation rights in formal instruments and its implementation. There is a need to redress the weight of existing power relations, especially for marginalized and vulnerable groups, to address deep-seated authoritarian elements of local cultures and some public institutions and reduce the resource constraints (human and material) of public institutions and those affected by or actively pursuing public participation.

Revenue transparency is an issue on which all stakeholders are agreed in principle. The portion of revenue obtained by African governments from mineral exploitation is however a matter of controversy. However, since the beginning of the current mineral commodity price boom the sense that African countries have not been obtaining commensurate compensation from the exploitation of their mineral resources has intensified and become more widespread across the continent. The Report emphasizes that development options should be one of the factors that should inform fiscal policy in the mining sector. It offers proposals about how African countries can capture more mineral revenue through the use of a variety of measures. These include: the application of methods for price discovery to set a fair market value for mineral resources, in appropriate circumstances; the use of various tax instruments including windfall taxes; caution in

the use of stability clauses; the closing off channels for the abuse of fiscal incentives by firms; and vigilance on issues as transfer pricing and the use of tax havens. The Report takes the view that the allocation of mineral revenues to communities in mining areas should be designed to ensure lasting benefits beyond the life of the mine.

The quality of minerals sector governance is an issue which runs through the Report – the quality and role of institutions; the capture, management and sharing of mineral revenue; policy coherence within countries and coordination among countries are some examples. Others are negotiating capacities; the management of and support for artisanal and small scale mining and the management of impacts. The importance of the quality of institutions and of the requisite governance is underlined by the report which highlights an all round need across the African continent for capacity enhancement in many areas. It also suggests that the promotion of linkages between mining and other sectors must be a critical part of national and regional institution building.

This Report and the African Mining Vision propose that Africa face up to the challenge of working for new directions founded on not taking the enclave nature of mining as an inevitable part of the continent's destiny but rather as a product of a particular phase of history; as something which can be overcome. The Report sets out some of the most important issues that have to be addressed and suggests they can be approached in striving towards the realization of the AMV.

# Introduction

# 1

## CHAPTER

**MORE THAN 30** years ago the Organization of African Unity, the precursor to the African Union (AU), adopted the Lagos Plan of Action for the economic development of Africa. The Plan presented a strategic review of Africa's development challenges and potential paths for economic growth and development (appendix D). Its identification then, of "the major problems confronting Africa in the field of natural resource development" rings familiar today:

"Lack of information on natural resource endowment of large and unexplored areas ...; lack of adequate capacity (capital, skills and technology) for the development of these resources; a considerable dependence on foreign transnational corporations for the development of a narrow range of African natural resources selected by these corporations to supply raw material needs of the developed countries; the inadequate share in the value added generated by the exploitation of natural resources of member States ...; non-integration of the raw materials exporting industries into the national economies of the member States thus impeding backward and forward linkages; the extremely low level of development and utilization of those natural resources of no interest to foreign transnational corporations; and the disappointingly low general contribution of natural resources endowment to socio-economic development".

Concerned about these continuing challenges, the "Big Table" met in February 2007 under the auspices of the United Nations Economic Commission for Africa (UNECA) and

the African Development Bank (AfDB). The theme of the Big Table was "Managing Africa's Natural Resources for Growth and Poverty Reduction". It was attended by ministers and senior officials from 11 mineral-rich African countries and representatives of the African Union Commission, among others. This directly led to the First AU Conference of Ministers Responsible for Mineral Resources Development in October 2008. At this Conference, the ministers adopted the Addis Ababa Declaration on the Development and Management of Africa's Mineral Resources, re-affirming their "commitment to prudent, transparent and efficient development and management of Africa's mineral resources to meet the MDGs, eradicate poverty and achieve rapid and broad-based sustainable socio-economic development". To achieve this, the ministers adopted the Africa Mining Vision (AMV), advocating for "transparent, equitable and optimal exploitation of mineral resources" to achieve the envisaged "broad-based sustainable growth and socio-economic development".

At their meeting held in Addis in February 2009, the AU Heads of State and government welcomed the AMV and requested the "AU Ministers in charge of Mineral Resources Development to develop a concrete action plan for its realization", acting in partnership with UNECA, AfDB, regional economic communities and other stakeholders. They further called on the international community and Africa's development partners to support the efforts of member States "towards enhancing the contributions of the mineral resources to the achievement of the MDGs,

the eradication poverty and the promotion of sustainable economic growth and development”.

Against this backdrop of concerns and commitments, the International Study Group (ISG) was established by UNECA in September 2007, pursuant to the recommendations of the Big Table meeting of the same year. This recommendation was one of 22 proposed to address the above challenges to the mineral and other natural resources sectors in Africa. Thus a key objective of the ISG was to explore how mineral regimes in Africa might be made to contribute to the broad development of the continent. (A list of members of the ISG and of the principal people who provided research inputs into the ISG work is attached as appendix A.)

The Big Table acknowledged that “sound governance systems, capacity to administer and monitor the sector, and better linkages ...[with other] sectors of the local economy” were pre-requisites for resource exploitation to contribute to growth and development. The pressures arising, particularly in the 1990s, from efforts to attract foreign direct investment into the sector and their consequences for the regimes that were put in place, as well as changing global conditions and norms, were significant in the context of calling for a fresh set of actions. (A summary report on the Big Table is attached as appendix B.)

At its inception meeting held in Addis on 4–6 October 2007, the ISG agreed on the terms of reference (appendix C). It subsequently decided to separate formulating a framework report setting out fundamental perspectives from developing detailed tools dealing with particular aspects of mineral regimes. This is that framework report. Previous drafts of the report have been discussed at two stakeholder consultative workshops held in Accra and Kigali and at a final validation workshop held in Addis October 2010. Thus the report has substantially benefited from diverse stakeholders.

The framework report seeks to contribute to the elaboration of an updated strategic policy framework for developing Africa's minerals as called for by the Lagos Plan of Action, the Big Table and the subsequent meeting of African Ministers Responsible for Mineral Resources Development, as well as the Heads of State and Government.

It is based on the central premise of the AMV that the structural transformation of African economies is “an essential component of any long-term strategy to ensure the attainment of the Millennium Development Goals (MDGs) ..., eradicate poverty and underpin sustainable growth and development”, and that this requires “a strategy ... rooted in the utilization of Africa's significant resource assets”.

The report is organized as follows. Chapter 2 sets out current features as well as the historical context of mining in Africa and its key drivers. It argues that the colonial construct of mining was based on supplying raw materials especially to Europe, thus creating enclave African mineral economies. Through the post-colonial period, dominated by an under-performing state-led mineral industry, and subsequent reforms led by the World Bank, the African mineral sector continues to be an enclave, leading to increased calls for its re-orientation to better meet the continent's development needs.

Chapter 3 summarizes global demand and supply trends and the underlying factors, including the emergence of China as a world player. It argues that demand is going through a super cycle and agrees with the projection that mineral commodity prices will be sustained at least in the near term. Together with the current geo-political competition for Africa's mineral resources, this provides a good opportunity for re-orienting Africa's mineral industry to play a more developmental role.

Chapter 4 explores the challenges arising from the environmental, human and social impacts of mining. It reviews the principal mechanisms for regulating them and provides a broad evaluation of their operation in Africa. It notes the need to better incorporate the burdens mining imposes in economic assessments that focus on the benefits derived from mining.

Chapter 5 recognizes the economic and social significance of artisanal and small-scale mining (ASM) in Africa. It not only presents well-known difficulties that the sector faces, but also indicates examples of initiatives to address them. It recommends or endorses several policy proposals for better supporting ASM and integrating it into national economies.

Chapter 6 discusses the scope and drivers of corporate social responsibility (CSR) in Africa's mining industry and its application. It examines the benefits and limits of CSR as well as the challenges that the practice of CSR by mining companies in Africa faces in state capacity and societal expectations of development.

Chapter 7 looks at mineral revenue issues, noting the conflicts between the revenue capture objectives of governments and investors. It identifies the principal tax instruments deployed in the mining sector and considers some of the mechanisms reducing or limiting the taxes paid by companies. The chapter also discusses issues relating to public sector management of mineral revenue, the basic elements of a regime for revenue transparency (including the Extractive Industries Transparency Initiative) and mechanisms for enabling communities affected by or close to mining operations to obtain a share of revenue generated.

Chapter 8 focuses on the framework for moving from mining as an enclave to mining as a promoter of industrialization and development. It reviews experiences of link development in Africa, identifies constraints to be overcome and proposes a strategy for promoting mineral resource-based linkages.

Chapter 9 turns to international trade and investment regimes, focusing on elements that could impose significant constraints on Africa's capacity to realize its development objectives. These elements, which could undermine the project of using the continent's mineral resources for its industrialization, are particularly noteworthy.

Chapter 10 considers the implications for institutional policy of the proposal to change the focus of mineral policy. It seeks to reaffirm the legitimacy and potential of public sector institutions, particularly in view of the assaults many suffered in the course of the reforms of the 1980s and 1990s. It presents examples of institutional arrangements to promote mineral-based linkages and suggests some to encourage them in a regional context as well as others for enhancing capacity and reviewing governance.

Chapter 11 reviews the efforts of promoting mineral policy harmonization by regional and subregional institutions within Africa.

Chapter 12 seeks to summarize the key challenges and policy messages that could transform the African mineral sector into a tool for broad socio-economic development, as called for by the AMV.

The ISG hopes that this framework report contributes to the implementation of the AMV. In line with its broad aim of assembling a pool of knowledge and experiences, the expectation is that it will guide the implementation of the AMV through a subsequent phase which develops toolkits, templates, guidelines, briefing notes and other instruments for use in the formulation or revision of mineral regimes in Africa. It is also expected that the framework report will contribute to the development of the Action Plan, by the AUC, the AfDB, and UNECA, as called for by the AU Heads of State and Government at their Summit in February 2009.

# Africa's minerals: history and search for direction

## 2 CHAPTER

*“Africa’s efforts to transform the mining sector away from its colonially-created enclave features have so far met with very limited success. The Africa Mining Vision offers a framework for integrating the sector more coherently and firmly into the continent’s economy and society”*  
— *The Africa Mining Vision*

**MINERALS OF POTENTIAL** value for a range of applications are found in most African countries (appendix E). More than half the countries on the continent regard mining as an important economic activity and are producing minerals for an international market outside Africa.

Africa’s reserves and production of some minerals are significant in world terms. Examples include bauxite, chromium, cobalt, gold, manganese, phosphate, platinum group metals (PGMs) and titanium, as well as diamonds. In some instances (chromium, cobalt and PGMs, for example), reserves and production are concentrated in a few countries (such as the Democratic Republic of the Congo, South Africa and Zambia), but more usually reserves are spread among many.

Some volumes of minerals produced and exported from Africa are also significant for world industrial consumption, such as copper and iron ore, even though these do not represent a large proportion of global production.<sup>1</sup> Given that large tracts of the continent have not been geologically surveyed systematically at appropriate scale, it is likely that Africa has a much larger mineral base than is known.

The paradox of Africa’s mineral (and indeed, natural resource) wealth, on the one hand, and the pervasive poverty of its people, on the other, remains a deep and oft-noted feature of its economic landscape (table 2.1).



**Table 2.1****Percentage of people living on less than \$1.25 a day (2005 purchasing power parity)**

	1990	1999	2005
Developing Regions	45.5	32.9	26.6
Northern Africa	4.5	4.4	2.6
Sub-Saharan Africa	57.4	58.2	50.7
Latin America and the Caribbean	11.3	10.9	8.2
Caribbean	28.8	25.4	25.8
Latin America	10.5	10.2	7.4
Eastern Asia	60.1	35.6	15.9
Southern Asia	45.5	42.2	38.6
Southern Asia excluding India	44.6	35.3	30.7
South-Eastern Asia	39.2	35.3	18.9
Western Asia	2.2	4.1	5.8
Oceania	-	-	-
Commonwealth of Independent States (CIS)	2.7	7.8	5.3
CIS, Asia	6.3	22.3	19.2
CIS, Europe	1.6	3.0	0.3
Transition countries in South-Eastern Europe	0.1	1.9	0.5
Least Developed Countries (LDCs)	63.3	60.4	53.4
Landlocked Developing Countries (LLDCs)	49.1	50.7	42.8
Small Island Developing States (SIDS)	32.4	27.7	27.5

1/ High-income economies, as defined by the World Bank are excluded.

2/ Estimates by the World Bank, April 2009.

Source: MDG Report Statistical Annex 2009 <http://unstats.un.org/unsd/mdg/Resources/Static/Data/2009%20Stat%20Annex.pdf>

Dumett (1985) concludes a study of the place of Africa's minerals in the Second World War with the following:

"A wide range of African metallic and non-metallic ores played a vital—and in some cases an indispensable—role in the Allied victory in 1945. But for the African peoples and countries most directly involved, the wartime upsurge had an uneven impact. Wage increases were in no way commensurate with the increased workloads nor with the pay scales for European miners. Except in the Union of South Africa and Southern Rhodesia, where greater agricultural and industrial diversification was already in train, the expansion of the mining industries perpetuated enclave development".

Mining's contribution as a supplier of strategic minerals to industrialized countries, the focus of policy on those minerals that play that role, the inadequate returns to the continent and the enclave nature of mining industries remain central features of the African landscape today.

This chapter sets out the processes by which these features became entrenched—a central part of the experience in which the colonial state had a strategic role. It describes some of the attempts by post-colonial governments to respond to the limitations of the mining regimes that they inherited as well as the outcomes of the radical changes in policy that dominated the second half of the 1980s and the 1990s. It is these outcomes that form the immediate backdrop to how the Africa Mining Vision (AMV) highlighted at the end of the chapter, was formulated and adopted in 2009.

## Evolution of African mining

### Mining on the eve of the colonial period

As late as the beginning of the 19th century, despite the many years of direct contact with European traders and the influx of European goods, most African societies still produced their own iron and its products or obtained them from neighbouring communities through local trade. The quality of iron products was such that, despite competition from European imports, local iron production survived into the early 20th century in some parts of the continent. This was the case at Yatenga in modern day Burkina Faso, where in 1904 there were as many as 1,500 smelting furnaces in production.<sup>2</sup> The production process covered prospecting, mining, smelting and forging. Different types of ore were available all over the continent and were extracted by shallow or alluvial mining. A variety of skills was required for building furnaces, producing charcoal, smelting and forging iron into goods. Iron production was generally not an enclave activity but a process that fulfilled the totality of socio-economic needs as well as fitted the gender division of labour within communities.

Copper production and use have a longer genealogy than iron in some parts of Africa. From ancient Egypt through parts of modern Niger, Mauritania and central and southern Africa, African societies have been mining and using copper and its alloys for centuries. Today's major copper-producing areas in Africa, notably the Copper belt, were sites of indigenous production for many years before the takeover by colonial foreign mining companies. According to Zeleza (1993: 183) "there have hardly been any copper producing areas in the twentieth century in Africa that were not worked before". In most places, copper was produced through open-cast as well as underground mining. In addition to utilitarian objects such as wires, rods, vessels and other utensils, copper smiths produced jewellery and ornaments and cast art pieces such as statues.

The patterns of indigenous artisanal and small-scale mining exhibited in pre-colonial copper mining are not dissimilar to that in the gold mining industry—which also had a long history—in north-eastern, west and southern

Africa. In the millennia preceding colonialism, west and southern Africa were major exporters of gold to the rest of the world. More than 4,000 ancient gold workings have been found in southern Africa alone. Production by foreign companies during the colonial era in many cases initially used generations of indigenous knowledge about the location of the precious metal and appropriate local mining sites. While prospecting methods varied among societies, gold mining involved panning of alluvial deposits, as well as surface or underground mining.<sup>3</sup> Across Africa, modern artisanal gold mining retains strong continuities with pre-colonial practices.

Despite the allure and status of gold, salts were the most important commodities in parts of pre-colonial Africa. Trade in salts was the most important regional commercial activity in several areas, including the Sahel and the Sahara, especially the Western Sahara, central Sudan (west of Lake Chad) and the northern section of the western Rift Valley and its plateau borderlands, and the Great Lakes area around the modern border of the Democratic Republic of the Congo and Uganda.<sup>4</sup>

Salts were extracted from a range of sources with different processes. The most important sources in the Sahel and the Sahara were rock salt deposits, mined from pits and saline ponds, on the top or edges of which salt crusts accumulated, thanks to high rates of evaporation. Several thousand tons of these salts—sodium chloride, sodium sulphate, sodium carbonate, potassium chloride, calcium carbonate, sodium phosphate, potassium sulphate and calcium sulphate, in various combinations and concentrations—were each produced and gave rise to a far-flung export trade that served diverse consumption and industrial purposes. This trade reached as far as present-day Benin, Ghana, the Niger, Nigeria, Togo, and parts of Burkina Faso and Mali, and as far south of the Congo River basin.



## The colonial creation of export mining

The competition to find and control sources of raw materials, including minerals, was one of the main drivers of European penetration and eventual colonial partition of Africa in the last quarter of the 19th century. Between 1870 and the Great Depression of 1929 the pre-colonial patterns of production and consumption of minerals, where these activities were firmly located and integrated in the local economy, were radically altered and replaced by a colonially-induced pattern, in which foreign-owned mining enclaves dominated most colonial African economies.

The British, Belgian and Portuguese colonies were prominent in the emergence of Africa's colonial mining industry, reflecting their generous resource endowments and colonial mining policies— and for Britain, its leading place in the global economy. German ambitions were thwarted with its defeat in the First World War. The considerable mineral resources of its South-West Africa colony (modern Namibia) became available to British and South African capital, but German financiers were active in the South African mining industry. Although French investors were important players in southern African mining before the First World War, French colonial mining policy and activity picked up late, from the 1930s.

These mineral-based opportunities attracted heavy European migration to the colonies where most policies discriminated in favour of the new immigrants over Africans, both in terms of access to mineral rights and employment in the mining industry. Africans were usually relegated to low-skilled, low-wage and dangerous work. Initially, the development of the colonial mining economy centred on high-value minerals such as gold and diamonds.

This changed, however, as the processes of industrial and technological advancement in the world's dominant economies led to demand for hitherto unused or under-exploited minerals and to the discovery of new uses for known minerals. Between 1870 and 1939 technological advances and industrial development boosted demand for copper and worldwide copper production grew 20-fold. By the 1930s the Central African copper belt colonies of Northern Rhodesia and the Belgian Congo were among the top exporters of copper. Cobalt was an important

associated mineral and the copper belt, mainly the Belgian Congo, quickly became its biggest source.

Manganese was discovered in the Gold Coast (modern Ghana) in 1914, and under the pressure of wartime requirements and the cessation of Russian exports the colony rapidly became a major exporter to the United Kingdom and its allies, principally the United States. By this time European gold mining had finally taken off in the colony after the false starts of the late 19th century.

From 1909 British firms took over tin mining in Nigeria's Jos Plateau and that country's production became crucial during the Second World War, after the Japanese expulsion of British forces from Malaya.

From the 1870s Africa, starting with South Africa and subsequently the Congo, the Gold Coast and Sierra Leone, came to dominate world diamond production, a position strengthened from the 1930s by growth in the industrial use of diamonds. This changed the centuries' old situation where only gem diamonds had value, and gave great importance to the industrial diamond production in the Belgian Congo and the Gold Coast.

By the turn of the 20th century South Africa had emerged as a major producer of diamonds and gold and its considerable and diverse mineral wealth became globally important. By 1910 minerals accounted for more than 80 per cent of South Africa's exports, and more than 40 per cent of those from Northern and Southern Rhodesia, the Gold Coast and the Belgian Congo, and a significant part of those from Angola, Sierra Leone and South-West Africa.

Most of the private foreign capital invested in Africa from 1870 to 1935 went into mining and much colonial public investment was intended for developing mining. South Africa received the bulk of the investment and the subsequent re-investment of the considerable profits from its diamond and gold mines, fuelling the expansion—and transformation—of the wider economy as well as the country's emergence as a racially-segregated country and the dominant economy in Southern Africa, with the other economies in its orbit.

## The role of the colonial state in African mining

The centrality of mining often influenced the way in which the colonial state developed. That state was active in creating the political and legal security for mining investment;<sup>5</sup> providing political and legal support to mining firms for acquiring and controlling the requisite African labour;<sup>6</sup> and developing the necessary transport infrastructure.<sup>7</sup>

In all cases, the regimes that colonial governments established around mining ensured the obliteration of African enterprise, even where the geological conditions favoured small-scale producers and where African tradition and experience were considerable, as in the Gold Coast and Southern Rhodesian gold industries.<sup>8</sup> How to procure, retain and keep down the cost of African labour, then a scarce commodity, posed challenges in which state intervention proved crucial.

Apart from forcible dispossession of natives of their lands, the methods used to compel African males to work for (often down) the mines, as well as how they were treated

by mining companies, represent the darkest aspect of the history of colonial mining in Africa. This was especially so in the settler colonies where it became the symbol of racial segregation, of which apartheid in South Africa was at the lowest point. Africans were subjected to a poll tax, which was arbitrarily scrapped in times of labour abundance, or increased during lean periods of labour, simply to force them from their villages to seek work in the very poor conditions of the mines.

More than half the public infrastructure investment in sub-Saharan Africa in the decades before the Second World War went into transport, especially railways connected with mining. The main effect of the rail investment was to reinforce the mines' enclave status and facilitate their externalize integration. For Northern and Southern Rhodesia, the Kariba Dam, which formed the largest artificial lake in Africa, was constructed to supply power to the large copper mines in present-day Democratic Republic of the Congo and Zambia.

## After the Second World War

With the war over, Britain and France (as well as Portugal and Belgium) changed their colonial development strategies, adopting policies that gave the state a more interventionist economic role to secure resource requirements for reconstruction. Britain established the Colonial Development Corporation, which became an important vehicle for public/private partnerships in the colonies, of which mining formed a significant part.<sup>9</sup>

France set up the *Fonds d'Investissement et de Développement Economique et Social* in 1946, and gave the development of colonial mining resources an important place in post-war planning. This was reflected in a 10-year development plan and institutionalized by the creation of the *Bureau Minier de la France d'Outre-Mer* (BMFOM) in 1948. BMFOM, which had a 700 million franc capital injection, was tasked with promoting prospecting and mineral development.<sup>10</sup> In 1947 the French Government took a majority holding in SOGUINEX, a subsidiary of the Consolidated African Selection Trust, engaged in diamond mining in Guinea. It was also instrumental in

creating the MIFERMA consortium in 1952 by European steel firms for the exploitation of Mauritania's vast iron-ore resources. The process was greatly aided by the readiness of the French Government to provide a quarter of the firm's equity and to guarantee loans for the project.

The late colonial period in West Africa also witnessed exploration activities that led to the establishment of Niger's uranium mines. Geological surveys initiated by the French Commissariat for Atomic Energy in 1955 resulted in the discovery of uranium concentrations north of Agades in 1966. The *Société des Mines de l'Air*, a joint venture between Niger's Government, the French Commissariat and French, German and Italian firms was set up in 1968 to exploit the deposit.

The immediate post-Second World War decades have been characterized as "the hey-day of mining companies in Africa. New mines were developed in all corners of the continent, and existing ones were expanded".<sup>11</sup> The last days of colonialism witnessed an upsurge in prospecting

activities and the start of new mining projects in many colonies and countries.

Some of the resulting projects came to define the post-colonial economic structure of African mining countries. Guinea, Liberia, Mauritania and Sierra Leone became major iron-ore exporters; Gabon, the Niger and South Africa started exporting uranium; and Guinea, which would soon become a major global source, saw the opening of its first bauxite mine in 1952.

### The early post-colonial decades

On independence, the political economy of mining epitomized the limits of the political power and economic control gained by newly sovereign African nations. In economies dominated by mineral exports, this most important sector was an externally-oriented enclave only narrowly linked with the rest of the domestic economy through the taxes paid to the state by the mining companies and their small pool of mainly lower level African workers. This disarticulation had several features:

- Ownership and operation of the mines was in the hands of foreign companies;
- Mining operations had very weak links with the rest of the economy, because most of the minerals were exported in raw form or after only basic processing;
- Firms imported most of their inputs and repatriated all their profits, except what was reinvested in mining operations;
- Export trade figures were dominated by mineral exports, but this painted a false picture of how much the country was benefiting from minerals given the import dependence of the mines, the free repatriation of profits, technical fees charged and the incomes of expatriate employees;
- Mining was a substantial, often the biggest, source of public revenue; and

The development of iron ore and production of bauxite in West Africa were the most important mining trends of the late colonial period. On the eve of Ghana's independence in 1957, African production of minerals—not just iron ore and bauxite, but also copper, rock phosphates, manganese, lead, zinc, uranium, chromites, cobalt and asbestos—had hugely expanded from just prior to the Second World War. The most spectacular increases were in manganese, phosphates and iron-ore, output of which had doubled; copper, which had risen by more than 150 per cent; and cobalt production, which had jumped by 350 per cent.

- The most important skills involved in running the mines came from expatriate employees thanks to the racist division of labour under colonialism that kept Africans in low-skill, low-wage jobs.

When Zambia attained independence in 1964, copper accounted for 40 per cent of GDP, 93 per cent of exports, 68 per cent of public revenue and 15 per cent of employment. For the Belgian Congo (which unlike Zambia exported a clutch of minerals), minerals accounted for 67 per cent of export earnings—copper alone 51 per cent of export earnings, 45 per cent of public revenue and 18 per cent of GDP, but only 2 per cent of employment.

African governments took policy steps straight after independence alongside steep drops in investment by mining companies in exploration and development at existing mines, and huge increases in dividend repatriation by foreign shareholders. For many governments, vesting minerals in the state, setting up state mining enterprises and taking substantial shares in existing mining companies were the principal instruments for enhancing their share of returns from the nation's mineral resources.

Yet the performance of the state mining enterprises then established has been mixed. The new management and procurement arrangements simply meant that basic control of running the business remained unchanged, though new avenues for repatriating revenue took on increased significance.<sup>12</sup> Most state mining companies functioned poorly, starved of investment in plant and machinery, and denuded of exploration activities. They also suffered from

a general lack of research and development to keep mining and processing operations competitive. Especially in base metals, unit mining costs soon outstripped metal prices.<sup>13</sup>

Another burden was that revenue from mining companies became part of the national cake that had to be used to finance other priorities—another factor in the lack of investment and ultimate demise of the state mining companies.

## A more liberal space for foreign investment

Many African countries in the early 1980s were severely indebted, leading the World Bank to become increasingly involved in designing reforms that were introduced into Africa's mining industry. In 1992, after the impact of the early to mid-1980s' glut of base metals that reduced prices and hence state revenue, the World Bank set out in its Strategy for African Mining, the first systematic presentation of reforms that it considered necessary to tackle Africa's poor performance in minerals. The World Bank saw that African mining was attracting only 5 per cent of global exploration and mining development expenditure. In view of the continent's huge mineral potential and the significance of mining to some economies, it felt that mining could provide "important benefits in terms of exports, foreign exchange earnings and tax receipts to support economic recovery in Africa".<sup>14</sup>

### What was needed in the 1990s?

According to the study, the future development of the mining industry would "largely depend on attracting new high risk capital from foreign mining companies"<sup>15</sup> because historically, it was "international mining companies which provided the management and technical capabilities and mobilized the necessary financing for mining".<sup>16</sup> To adapt to modern conditions of mining, it argued, African countries would have to avoid state ownership and attract private investors to mining.

In the study, the World Bank had surveyed 80 mining companies, including "juniors" and "majors". The results

Adedeji (1993: 395) notes, in relation to the first decade of the post-colonial era, that some countries set themselves the objective of achieving "fundamental change ... in the colonial economic structure by developing the domestic processing of primary products and by pursuing an import-substitution industrialization strategy". The reality, however, was that domestic minerals were seldom processed locally and converted into industrial products. Local value addition was not the name of the game.

The study argued that African mining's poor performance was rooted in two factors. First, the industry by the 1990s was in rapid decline, as evidenced by its falling share of world mineral output for most of those it produced (except for bauxite, rutile and uranium). Second, new geological information was in serious deficit, because of very little exploration activity. As a result, Africa succeeded less well than other regions in attracting new investment to exploration, which amounted to only 1 per cent of mineral production—compared with 10 per cent in other regions.

The World Bank's study concluded that the African mining industry could not take advantage of the growing demand projections of mineral commodities during the 1990s to the same extent as Latin America and Asia. Africa had simply not adapted well to the needs of the industry in the new international context. The study proposed a series of policy, regulatory and institutional reforms.

revealed that, after mineral potential and existing infrastructure (that is, key decision criteria), potential investors looked for a stable legal and fiscal framework, contractual stability, a guaranteed fiscal regime, assured profit repatriation and easy access to foreign exchange. Significantly, they also showed that macro-economic performance was less important because mining was greatly isolated from other sectors of the national economy (apart from features such as exchange rates). Investors also looked for a larger and a faster return on equity in Africa than in developed countries because they required higher risk premiums for projects there. The study also reasoned that investors

**Box 2.1****A brief account of post-colonial mining activity in Mali**

Shortly after independence from France in 1960 Mali's government created several state mining enterprises. Many regional geo-chemical surveys were conducted in the country between 1960 and 1980. The period between 1965 and 1975 was decisive for identifying all the indices and other occurrences in Mali of gold and diamonds, ferrous and base metals, building materials, phosphate and rare earths. This period saw small gold production at the Kalana mine and the establishment of cement factories, ceramic, tiles, brick and crushed phosphate rock. Mali developed its first national skills and its initial technical and administrative bodies in mining. Many Malian students were then trained with assistance from bilateral and multi-lateral partners, both abroad and in local training centres, for the needs of the mining industry and administration at all levels.

There was relative success in satisfying most of the rather small, local demand for industrial material and a relative boom in exploration work by state-owned companies.

By the mid-1980s Mali's mining industry was still embryonic, consisting of few construction material plants such as cement, marble, brickworks, phosphates, fertilizer and a small and poorly operated underground gold mine. The overall economy was under-performing (with hyper-inflation, a very poor balance of payments, a huge public internal debt and collapsing public enterprises), thus forcing the government to join sub-Saharan countries that implemented structural adjustment programmes favouring short-term fiscal redress and incentives to attract potential investors.

Mali then embarked, with other members of the West African Economic and Monetary Union, on a programme of privatizing, restructuring or liquidating state-owned enterprises, including those in the mineral sector. It devalued its currency by half in 1994, with the aim of reducing the fiscal deficit and attracting foreign direct investment to rehabilitate the economy, including mining. The government also developed new legal, regulatory and administrative frameworks more favourable to private investors.

These reforms helped to diversify potential sources of foreign funding for mineral surveys. The goal was to encourage export mining through projects of interest to large foreign mining companies with the know-how and financial and technical capacity required. Many exploration activities were financed by the United Nations Development Programme, the European Commission and Belgian and French cooperation bodies, and led to large-company involvement in developing world-class industrial gold mines.

The inventory and systematic monitoring of all resources by a well-staffed and well-performing geological survey department, as well as the development of side-stream and downstream activities, which had prevailed in the first decade of independence, are no longer seen. The bulk of geological work, including grass-roots initial data acquisition and inventory are now done by junior gold-exploration companies, which hand over their resources to the larger gold-producing companies.

*Source: Cheickna Seydi Diawara.*



preferred to keep majority ownership should state participation be required. Finally, it noted that investors were concerned about corruption and political risks.

In short, “Perceived mineral endowment, infrastructure, political stability, investment policies, and institutional framework, are all key determinants of exploration and investment decisions”.<sup>17</sup> Since mineral potential in Africa was not in doubt, the study argued that the perception of political risk was a major factor in determining investment flows into its mining industry.

To reduce investment risks to private mining companies, the World Bank prescribed recommendations in four main areas: the regulatory framework; economic and fiscal policy; institutional reforms and infrastructure; and environmental considerations.

### Results of reform—mixed at best

Although the extensive reforms of regulatory and legal frameworks introduced during the 1980s and 1990s helped to create a more favourable environment for foreign investment in African mining, their contribution to social and economic development objectives has been far less certain—even contested in many countries. Within the past decade a very visible civil society movement, protesting about the costs and questioning the benefits of the revitalized mining sectors, has emerged in many mineral-rich African countries. The example of Mali (box 2.1) may show why.

The following appraisal of those reforms may be taken as illustrative of widespread uncertainty over their benefits:

“Certainly from the corporate perspective, the outcomes of the recent reforms in the mining sector in Africa have been positive, as reflected in the significant increases of FDI in the sector. From the host country perspective, in order to assess the outcome of these reforms, governments would need to consider whether the increasing incentives provided to foreign investors have been offset by the desired outcomes .... Already some observers have described

The key elements of African mineral policies that emerged during this period may be summarized as follows. African governments:

- Reduced or eliminated state participation in mining enterprises;
- Provided a wide range of incentives, causing foreign direct investment (FDI) into the industry to surge;
- Made tax regimes more competitive relative to those in other developing regions, particularly Latin America;
- Liberalized exchange controls and exchange rate policy; and
- Introduced investment-protection assurances, including those on the stability of the fiscal regime for a specified length of time (the “stabilization period”), dividend repatriation and non-expropriation.

the incentive competition as a “winner’s curse” for host countries, whereby investment competition among host countries can trigger a “a race to the bottom” not only in the more static sense of forgone fiscal earnings but also in terms of giving up policy options necessary to organize a more dynamic long term growth path”.<sup>18</sup>

In 2007 a “Policy Big Table” organized by the United Nations Economic Commission for Africa (UNECA) and the African Development Bank, which brought together officials from the two bodies and the African Union (AU), African countries and international organizations, noted that the scale of the reforms in African mining since the 1990s “did not have any historical precedent”. It concluded that Africa had not traditionally gained the best possible benefits from the exploitation of its natural resources, a situation exacerbated in the 1990s “by African efforts to attract FDI to their natural resources sector, which led to the formulation of overly generous investment laws and regulations”.

The Big Table urged African countries to seize the “window of opportunity offered by the boom in demand for

**Box 2.2****The Africa Mining Vision**

- A knowledge-driven African mining sector that catalyses & contributes to the broad-based growth & development of, and is fully integrated into, a single African market through:
  - Down-stream linkages into mineral beneficiation and manufacturing;
  - Up-stream linkages into mining capital goods, consumables & services industries;
  - Side-stream linkages into infrastructure (power, logistics; communications, water) and skills & technology development (HRD and R&D);
  - Mutually beneficial partnerships between the state, the private sector, civil society, local communities and other stakeholders; and
  - A comprehensive knowledge of its mineral endowment.
- A sustainable and well-governed mining sector that effectively garners and deploys resource rents and that is safe, healthy, gender & ethnically inclusive, environmentally friendly, socially responsible and appreciated by surrounding communities;
- A mining sector that has become a key component of a diversified, vibrant and globally competitive industrialising African economy;
- A mining sector that has helped establish a competitive African infrastructure platform, through the maximisation of its propulsive local & regional economic linkages;
- A mining sector that optimises and husbands Africa's finite mineral resource endowments and that is diversified, incorporating both high value metals and lower value industrial minerals at both commercial and small-scale levels;
- A mining sector that harnesses the potential of artisanal and small-scale mining to stimulate local/national entrepreneurship, improve livelihoods and advance integrated rural social and economic development; and
- A mining sector that is a major player in vibrant and competitive national, continental and international capital and commodity markets.

minerals and metals and the accompanying price surge to extract better terms from natural resources exploitation and to catalyse growth and poverty alleviation across the

## From past results to renewed approaches

The conclusions of the Big Table were an important catalyst for Africa's Heads of State and Government in 2009 to adopt the AMV (box 2.2). The Vision seeks to shift mineral policy beyond a focus on extracting minerals and sharing revenue. It relates such policy to the demand for structural transformation of Africa's economies and, premised on the abundance and significance of its minerals, proposes (or re-affirms) an industrialization strategy anchored on minerals and other natural resources as critical for achieving the Millennium Development Goals, eradicating poverty and securing sustainable growth and development on the continent.

The Vision was drafted by a technical task force set up by the AU and UNECA, which had representatives from the African Mining Partnership, the African Development Bank, the United Nations Conference on Trade and Development and the United Nations Industrial Development Organization (UNIDO). It was endorsed by the first ordinary session of the AU Conference of Ministers Responsible for Mineral Resources Development in October 2008. It is informed by the outcomes of several initiatives and efforts made at subregional, continental and global levels to formulate policy and regulatory frameworks to maximize the development outcomes of the exploitation of mineral resources. The AMV provides an important step towards developing a continental mineral strategy tailored to the African context and emanating from a focus on its interests and situation as the originating source of policy.

A central premise of the AMV is that mining in Africa must be constantly re-evaluated by its contribution to broad and long-term development goals. It insists that mineral operations need not—and should not—be activities of an enclave.

The Vision acknowledges the governance challenges that must be overcome for Africa's minerals to contribute to sustainable development. However, unlike several other proposals for exploiting the mineral resources and

continent". It proposed that existing natural resource laws and regulations be reviewed "to better accommodate the interests of African countries".

collecting and managing the revenues of the continent, it recognizes governance as only part of the range of challenges that have to be addressed in formulating a comprehensive framework of policy to nurture a development-oriented sector.

The goal of a "vibrant ... industrializing African economy" emphasizes the role of industrialization and industrial policy if the continent's development possibilities are to be realized. In the words of UNIDO, "Industrialization is integral to economic development. Scarcely any countries have developed without industrializing and rapidly growing economies tend to have rapidly growing manufacturing sectors".<sup>19</sup> It is now no longer fashionable to discount the active interventions required of the state to articulate industrial policy and promote industrialization.<sup>20</sup>

Several references in the AMV implicitly acknowledge the limits posed by the size of states and the global context in which they have to operate. The importance of a harmonized continental approach in creating a development-oriented policy framework is implicit in the Vision.

The Vision also highlights the desire for well-managed engagement of stakeholders, including industry and the private sector, international and regional financial, government and social institutions, local communities, different government agencies and non-governmental organizations. Engagement and empowerment of marginalized stakeholders, including artisanal and small-scale miners, women and local communities remain underlying features that need to be addressed within mineral policy development.

In its reference to gender inclusiveness, the AMV seeks to apply to mining principles that are widely articulated in African and international legal and policy instruments.<sup>21</sup> The context is that mineral operations will reproduce or even exacerbate gender disparities if no effort is made to address them.



The implications of the Vision for developing African mineral policy may be summarized in the following objectives:

- Enhancing retained value by promoting linkages;
- Obtaining an adequate share of mineral revenue;
- Improving public participation and accountability;
- Pursuing an integrated view of rights of various stakeholders;
- Valuing environmental resources;
- Using mineral revenue efficiently;
- Promoting local development;
- Encouraging regional cooperation and harmonization; and
- Strengthening institutions: building capacity and developing networks.

These themes form the framework for the rest of the book.

## Endnotes

- 1 See Taylor et al., 2009; USGS, n.d.
- 2 Zeleza, 1993.
- 3 Phimister, 1976; Zeleza, 1993; Allen, 1958; Macdonald, 1902.
- 4 Good, 1972; Lovejoy, 1978; McDougall, 1990.
- 5 Greenhalgh, 1985; Hodder, 1959; Illegbune, 1976; Radmann, 1978; Slinn, 1979.
- 6 Crisp, 1984; Lanning and Mueller, 1979; Thomas, 1973; Zeleza, 1993; Derksen, 1983, Greenhalgh, 1985.
- 7 Lanning and Mueller, 1979, 72; Hailey, 1957; Fell 1939.
- 8 Silver, 1981; Phimister, 1976.
- 9 Hailey, 1957.
- 10 Hailey 1957.
- 11 Lanning and Mueller, 1979.
- 12 See Lanning and Mueller, 1979.
- 13 Asante, 1979; Libby and Woake, 1980; Greenhalgh, 1985; Yachir, 1988.
- 14 World Bank, 1992: x.
- 15 World Bank, 1992: 10.
- 16 World Bank, 1992: xi.
- 17 World Bank, 1992: 18.
- 18 UNCTAD, 2005: 45.
- 19 UNIDO, 2009: 4.
- 20 See Hausman et al., 2008a, 2008b; Rodrik, 2004; Amsden, 2009.
- 21 Such as article 13 of the Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa, 2003; article 4 of the African Union Constitutive Act; and the Solemn Declaration on Gender Equality in Africa, 2004.

# Global trends

# 3

## CHAPTER

*“It is important to learn from the experiences and best practices of other regions. The current global competition in the demand for mineral resources, particularly with increased activity from China, India and Brazil, presents opportunities for Africa”*  
— *The Africa Mining Vision*

This chapter sets out the global context in which Africa’s mining regimes are evaluated. It identifies global market trends as well as activity and thinking in the important mineral producing and consuming regions. The objectives are to set the African mining industry into the global scene, give policymakers an understanding of long-term trends in metal markets and in investment behaviour and present a brief overview of recent policy perspectives from Europe, the Americas and Asia.

## Demand for mineral commodities

### Global distribution of demand

Demand for mineral commodities has increased dramatically since the turn of the century. Although use of most metals increased by 1–2 per cent a year in the 1980s and 1990s, growth rates after 2000 were much higher. For instance, world crude steel production rose by 1 per cent a year from 1990 to 2000, but by 6.8 per cent a year from 2000 to 2007. Most of this rapid growth was due to industrial expansion and urbanization in China, where raw materials demand surged as that economy accounted for an ever-growing share of the world’s manufactured

products. From 1995 to 2005 China’s contribution to world industrial production doubled to 12 per cent. Table 3.1 shows that from 2000 to 2007, China more than doubled its share of global demand for aluminium, copper and zinc, tripled that for lead and quadrupled that for nickel.

During the period, its share of iron-ore imports tripled, from about 16 per cent to 48 per cent, accounting for 32 per cent of total world crude steel demand.

**Table 3.1**

Chinese influence on world demand for refined metals demand, 2000–2007

	Refined use, 2007	Share of China, 2007 (per cent)	Share of China, 2000 (per cent)
Aluminium (kt)	12,267	32.5	13.0
Copper (kt)	4,800	26.2	11.8
Zinc (kt)	3,750	32.1	14.9
Lead (kt)	2,548	30.6	10.1
Nickel (kt)	345	24.9	6.0
Tin (kt)	150	39.9	18.6
Crude steel (Mt)	437	32.3	16.3
Iron-ore seaborne imports (Mt)	379	48.2	15.6

**Source:** Ericsson (2009) citing Chinese statistics and metal forecasting, Macquarie Commodities Research, Macquarie Capital Securities (2008).

kt = Thousand tons ; Mt = Million tons.

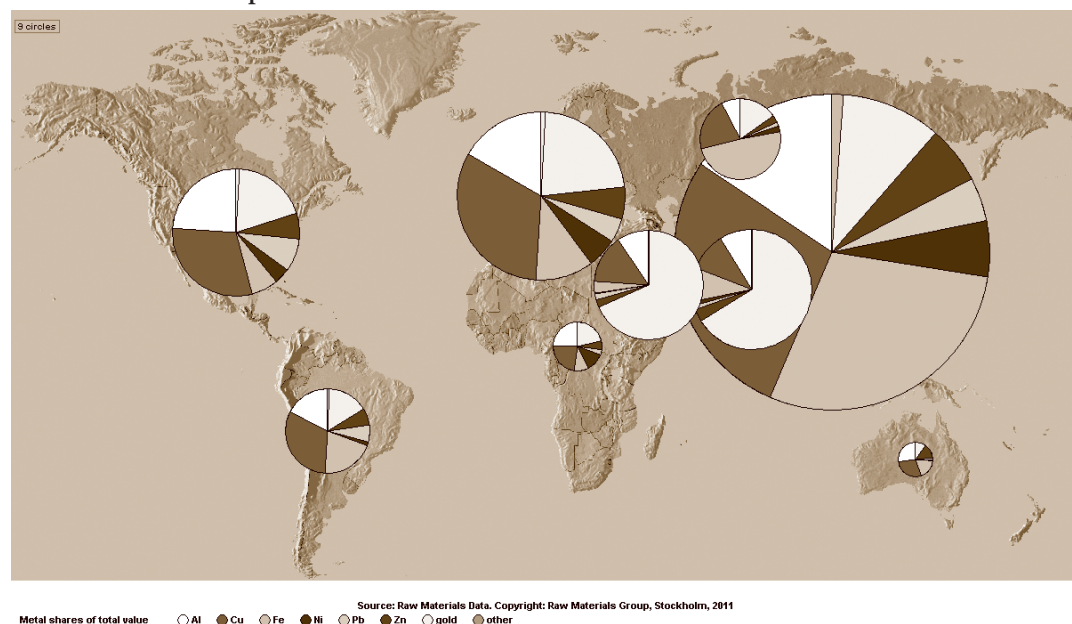
India and Brazil also experienced high growth rates in metal use, while the United States remained a substantial consumer of minerals produced both from domestic sources and imports. (Appendix F shows the principal minerals of which the United States imports more than it produces, and the major sources.)

The uneven distribution of global metal demand is illustrated in map 3.1. Africa accounts for only a very small part of the total. Growth in African metal demand has risen

quickly, albeit from a low base, during the recent boom years. Steel demand, for example, grew by 4.5 per cent between 2000 and 2007 in Africa, faster than in Latin America (3 per cent) but slower than in Asian countries except China, Japan and the Republic of Korea (7.5 per cent). For the period up to 2020 African steel demand is expected to increase by 4 per cent a year, once again higher than Latin America (2 per cent) and catching up a bit on Asian countries except China, Japan and the Republic of Korea (6 per cent).

**Map 3.1**

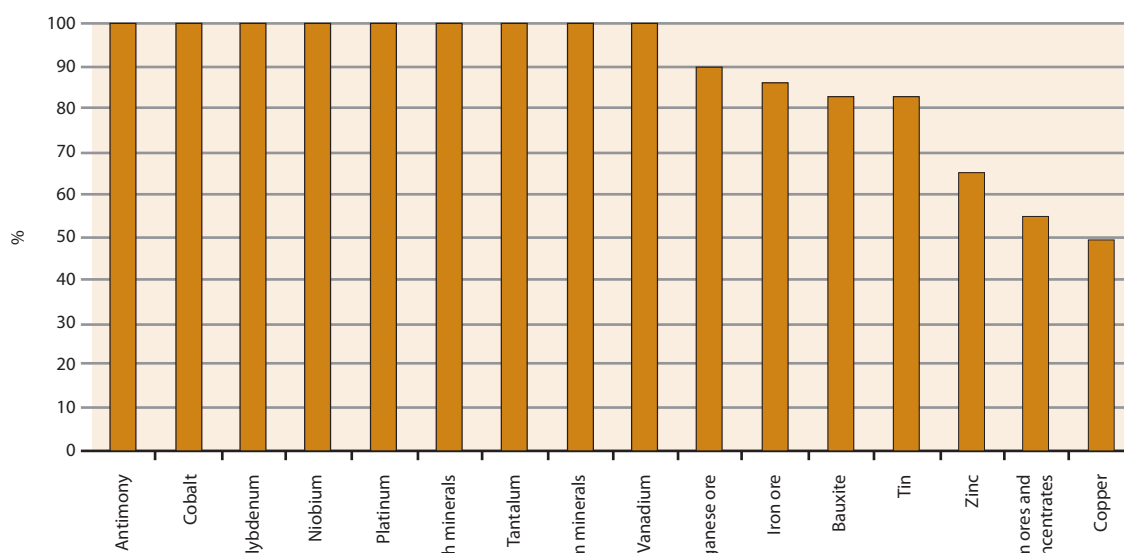
Global metal consumption



Source: Raw Materials Group, 2011.

**Figure 3.1**

Metal concentrates and ores: EU net imports as share of apparent consumption (per cent)



Source: Ericsson (2009), citing European Commission.

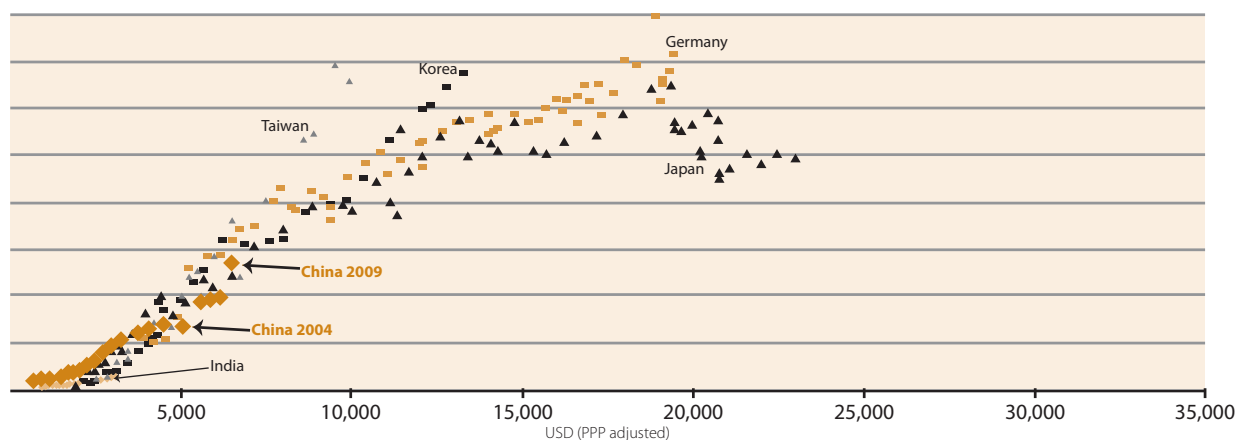
Metal consumption in the European Union (EU) represents about 20 per cent of the global total. For more than half the metals shown, it imports all of its consumption (figure 3.1).

Demand for metals is strongly linked to general economic development. Per capita use of most metals grows slowly until a GDP per capita of \$5,000–10,000 a year and then

flattens out above that level (figure 3.2). Most metals and countries exhibit a similar pattern of growth or similar changes in the metals intensity of their economies. The absolute level at which per capita use flattens depends on the structure of the economy and industry. With a larger share of industry, use is normally higher than when services dominate.

**Figure 3.2**

Per capita use of copper vs GDP



Source: Raw Materials Group, 2011.

This is the basis for the strong demand of the Chinese economy—it is currently passing through that stage of its economic development. Demand is further strengthened by the sheer size of the economy, its population of more than 1 billion and strong, centrally planned oversight in which state capital plays a large role in investment allocation.

Some evidence suggests that Chinese demand for metals has three main drivers:

- *Fixed capital formation:* Growth in fixed capital formation (investment in economic infrastructure) has

increased to around 40 per cent of GDP, a seemingly unsustainable rate;

- *Urbanization:* Urban migration is a strong driver of fixed capital formation. In China 10 million people a year are moving from the countryside to the cities, and this could increase fourfold if restrictions on the movement of labour are relaxed; and
- *Domestic consumption:* Use of metal-intensive kitchen appliances, housing and vehicles has grown sharply. Some estimates suggest that as much as 75 per cent of China's copper demand is for domestic consumption. Copper is a major input for such goods.

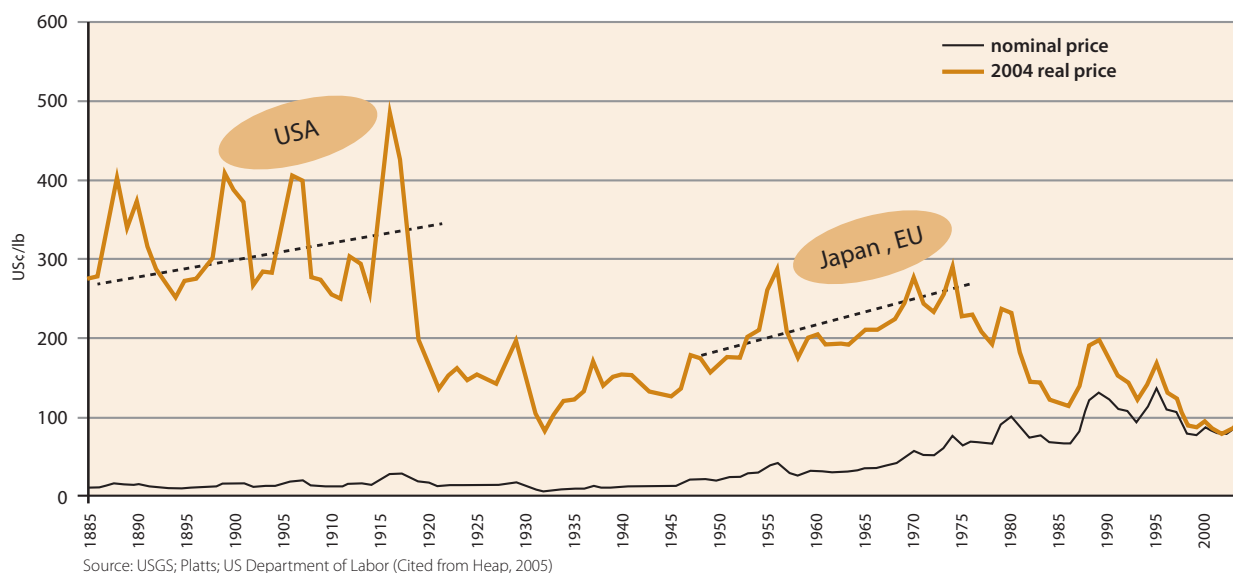
## Demand conclusions for the future

China's insatiable demand for metals has led many market observers to believe that metal prices are currently in the early phase of a "super cycle" driven by its industrialization and urbanization. Heap (2005: 1–2) defines a super cycle as a "prolonged (decades or more) trend rise in real commodity prices driven by urbanization and industrialization

of a major economy". He contends that there have been two super cycles in the last 150 years: from the late 1800s driven by the United States, and from 1945 to 1975 driven by post-war reconstruction in Europe and subsequently by the Japanese economic renaissance.

**Figure 3.3**

Copper super cycles



Source: Raw Materials Group, 2011.

Other long-term projections of copper prices further support the thesis of a prolonged price rise of up to 40 years from about 1933 to 1975 (figure 3.4). A super cycle, or prolonged trend rise in prices, is driven by high, materials-intensive economic growth. This is reflected in a high and rising intensity of use—the amount of metal consumed per unit of economic activity, such as GDP. A super cycle is thus demand-driven and does not arise from supply-side constraints. Although there are business cycles within a cycle, prices rise on a trend basis. Declining intensity of use brings super cycles to an end as the economy evolves from material-intensive infrastructure and manufacturing and becomes more service-oriented.

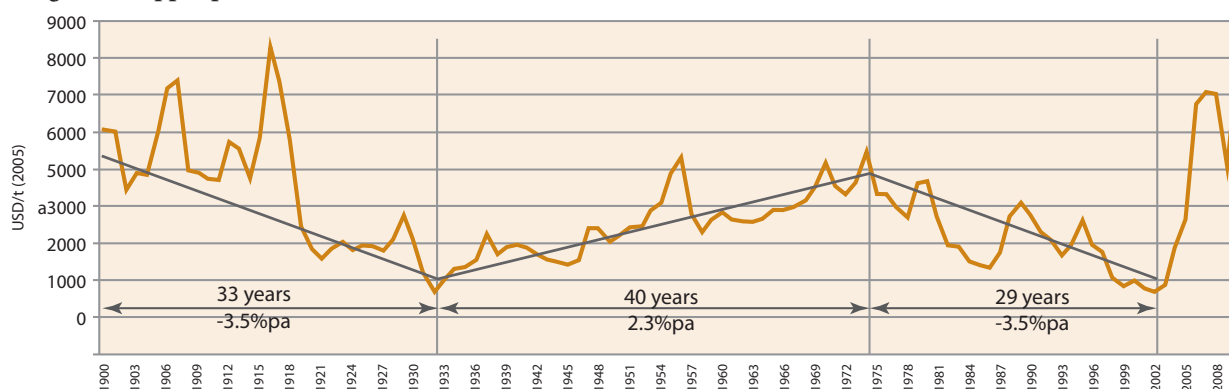
Cuddington and Jerrett (2008) argue that if super cycles are indeed demand-driven, their components in individual commodity prices should be positively correlated. They used an econometric approach to test the co-movement of

aluminium, copper, lead, nickel, tin and zinc—all crucial inputs in residential and other construction activity, transport and other infrastructure, and heavy manufacturing. They found that super cycles in the six metal prices were highly correlated, providing further evidence that super cycles are caused by prolonged demand expansion as major economies move through rapid economic development processes. They, too, argue that commodity prices are currently in the early phase of a super cycle.

China is the main driver of global economic growth at present, but many other countries are both populous and at a similar stage of development, such as Brazil, Russia, Turkey and several South-east Asian countries. All these countries are growing fast economically and are undoubtedly significant contributors to the current high demand for metals.

**Figure 3.4**

#### Long-term copper prices



Source: Raw Materials Group, 2011.

At current high levels of demand for copper, there is no stopping the present super cycle or the demand boom from continuing at least for another five years, and most likely the rest of the decade, unless global economic disaster hits. Although history does not repeat itself mechanically, it may well provide unforeseen events, such as the recent global financial and economic crisis that temporarily

upset the growth pattern of metal demand. The crisis hit the continent's mineral exporters, especially those in southern Africa. The sharp decline in commodity prices saw mines either close or put on maintenance regimes, with attendant job losses. About 346,700 jobs were lost in 2008 in the Southern African Development Community region alone.<sup>1</sup>

**Table 3.2****Metal prices, December 2008–December 2009**

	Zinc	Lead	Copper	Aluminium	Nickel	Tin	Platinum	Silver	Gold
	(\$/Mt)	(\$/Mt)	(\$/Mt)	(\$/Mt)	(\$/Mt)	(\$/Mt)	(\$/oz)	(\$/oz)	(\$/oz)
Year-end Price, 2008	1,121	949	2,902	1,455	10,810	10,355	899	11	865
Year-end Price, 2009	2,570	2,395	7,346	2,208	18,480	16,725	1,461	17	1,098
Per cent Increase	129.4	152.4	153.1	51.8	71.0	61.5	62.5	57.5	27.0

Source: London Metal Exchange, except for Pt (Johnson Matthey).

The swift rebound in prices of many metal commodities suggests, however, a super cycle. Table 3.2 shows metal prices at end-December 2009, with copper leading the dramatic year-on-year recovery at 153 per cent, the strongest since 2000. Both lead and zinc also posted price recoveries of more than 100 per cent.

Some academic economists remain sceptical that we are in a super cycle.<sup>2</sup> Still, the evidence of a sustainable long-term demand upswing, possibly of 10–35 years according to super cycle proponents, offers some basis for a carefully-formulated strategy to use metals and minerals as levers for economic development in Africa.

An emerging super cycle, or indeed any long-term trend rise in commodity prices, has important implications for profitable capacity expansion by both private and

government mining companies. With an increasing liquidity in the financial markets, a key message for African mining economies is to position themselves for greenfield or brownfield capacity expansion of mining projects.

Another implication is the use of resource revenues. Many African mineral economies rely heavily on them, either from direct equity participation in mining companies or tax receipts. A possible super cycle offers African mineral economies the opportunity to establish mutually-beneficial (government–mining company) long-term tax regimes, as well as the opportunity to extract development benefits from minerals. Unfortunately, most African mineral economies fail to exploit commodity export booms, such as the last one to about 2007. To achieve these benefits, they will need to be strategic in how they position this crucial sector for investment (see chapters 7 and 8).

## Supply of mineral commodities

### Global distribution of supply

China does not only have a large demand but it is also an important producer of metals and minerals. It is thus the most important mining country in the world. It is by far the largest producer of coal; it is also the largest producer of gold, zinc, lead, tin and manganese. It is the second-largest producer of iron ore. Its import dependency is high for copper and nickel, and growing for iron ore and many other metals. China is the sole supplier of rare earths and other metals and minerals used in highly-specialized technical applications for which there is no possibility of substitution.

Europe was an important mining region in the mid-19th century, but mineral production has declined since. The EU now accounts for only some 3 per cent of global metal output. It remains self-sufficient in construction minerals and is a major producer of dimension stone. Although Europe is a large producer of several types of industrial minerals, it is a net importer of most of its requirements (see figure 3.1).

Map 3.2 shows the global distribution of mine production for eight important minerals or mineral groups in 2008.



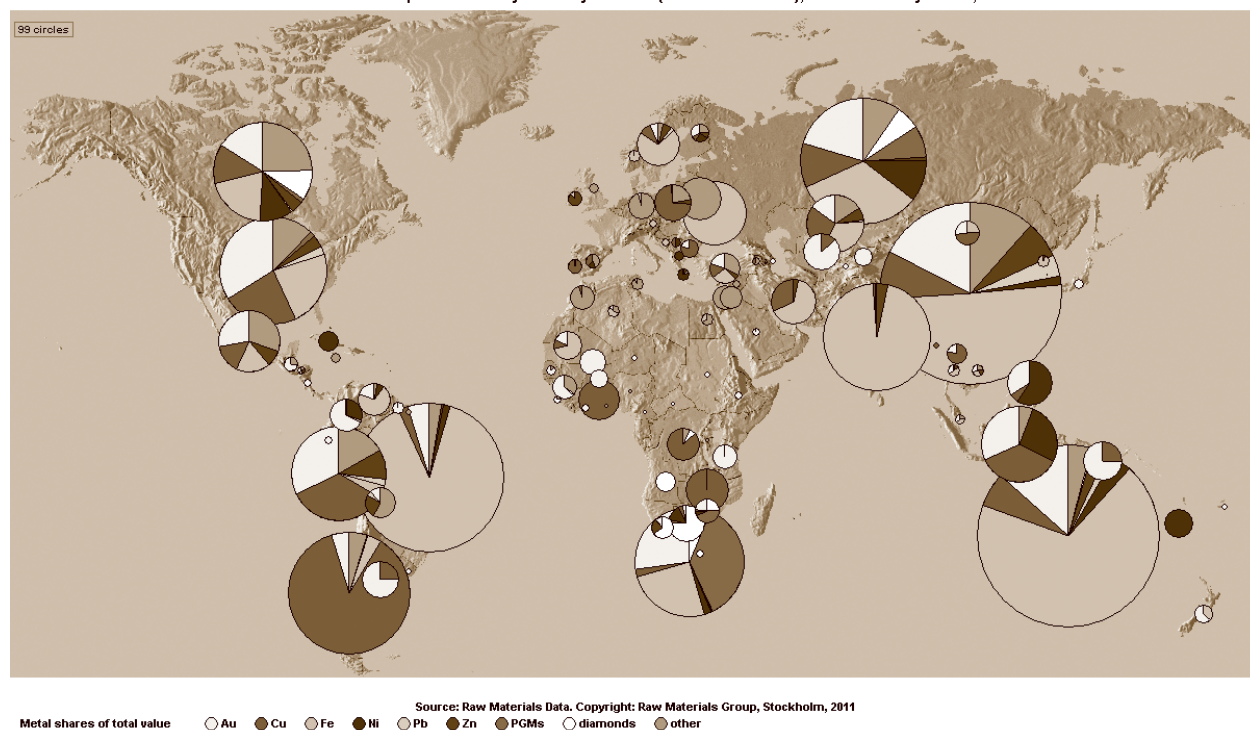
The proportion by value from different regions of the world is Africa, 11.5 per cent; Asia, 28.8 per cent; Europe (excluding Russia, Belarus, Armenia, the Ukraine and Georgia),

2.6 per cent; European Commonwealth of Independent States, 8.1 per cent; Latin America, 23.7 per cent; North America, 11.3 per cent; and Oceania, 14.0 per cent.

### Map 3.2

#### Global distribution of mineral production, 2008

Value of mine production by country in 2010 (% of world total), distributed by metal,



Source: Raw Materials Data, 2010.



Table 3.3 gives the three largest producers of various metallic minerals.

**Table 3.3**

**Top three mining regions for selected metallic minerals, 2006**

Metal	First	%	Second	%	Third	%	Cum. %
Rare Earth concentrates	China	95	USA	2	India	2	99
Niobium-Columbium	Brazil	90	Canada	9	Australia	1	100
Antimony	China	87	Bolivia	3	South Africa	3	93
Tungsten	China	84	Canada	4	EU	4	92
Gallium	China	83	Japan	17	-		100
Germanium	China	79	USA	14	Russia	7	100
Rhodium	South Africa	79	Russia	11	USA	6	96
Platinum	South Africa	77	Russia	11	Canada	4	92
Lithium	Chile	60	China	15	Australia	10	85
Indium*	China	60	Korea	9	Japan	9	78
Tantalum**	Australia	60	Brazil	18	Mozambique	5	83
Mercury	China	57	Kyrgyzstan	29	Chile	4	90
Tellurium	Peru	52	Japan	31	Canada	17	100
Selenium*	Japan	48	Canada	20	EU	19	87
Palladium	Russia	45	South Africa	39	USA	7	91
Vanadium	South Africa	45	China	38	Russia	12	95
Titanium	Australia	42	South Africa	18	Canada	12	72
Rhenium**	Chile	42	USA	17	Kazakhstan	17	76
Chromium	South Africa	41	Kazakhstan	27	India	8	76
Bismuth	China	41	Mexico	21	Peru	18	80
Tin	China	40	Indonesia	28	Peru	14	82
Cobalt	Congo D.R.C	36	Australia	11	Canada	11	58
Copper	Chile	36	USA	8	Peru	7	51
Lead	China	35	Australia	19	USA	13	67
Molybdenum	USA	34	China	23	Chile	22	79
Bauxite	Australia	34	Brazil	12	China	11	57
Zinc	China	28	Australia	13	Peru	11	52
Iron ore	Brazil	22	Australia	21	China	15	58
Cadmium	China	22	Korea	16	Japan	11	49
Manganese	China	21	Gabon	20	Australia	16	57
Nickel	Russia	19	Canada	16	Australia	13	48
Silver	Peru	17	Mexico	14	China	13	44
Gold	South Africa	12	China	11	Australia	11	34

**Source:** Ericsson (2009), citing World Mining Data (2008).

\* = World refinery production (USGS, 2008).

\*\* = USGS, 2008).

**Table 3.4**

African production and consumption of selected metals in 2009 (per cent of world)

	Aluminium/ bauxite	Gold	Copper	Iron ore	Nickel	Lead	Tin	Zinc
Consumption	2.0	1.2	1.1	0.5	3.3	1.0	0.4	1.3
Production	8.0	19.6	7.9	4.1	5.3	2.5	4.8	2.5

Source: WBMS, Raw Materials Data, 2010.

Table 3.4 compares Africa's production and consumption as a share of total world figures for selected minerals. It supports

the well-known fact that Africa does not consume the minerals it produces owing to its low levels of industrialization.

### Supply conclusions for the future

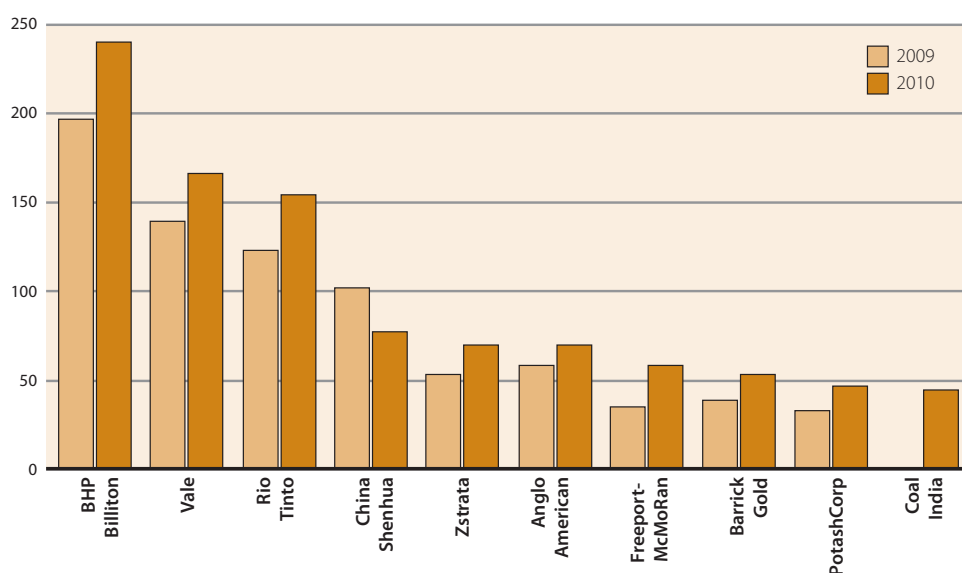
The locus of the world's mining industry has gradually moved. It was once in Europe but with the growth of the US economy in the 19th century mining moved across the Atlantic. In the latter part of the 20th century most mining took place south of the equator, where Africa, with Latin America, hosts large amounts of untapped mineral riches despite at least one century of resource misuse, particularly in Africa. Africa and Siberia are now the two largest remaining under-explored frontiers.

Global mine supply is largely controlled by big, transnational companies. They are the ones with the financial

and technical capacity to handle large mining investments, and the technology to operate big mines. Often they, along with investment banks, have the power to influence mineral commodity markets. The mining industry has seen much consolidation (figures 3.5 and 3.6). More is foreseen with easy credit and the strength of large mining companies' strong balance sheets. This bodes well for African mineral producers who need to strategically position themselves to attract mining investment. Figure 3.5 also shows the market capitalization of the top ten mining companies in the world.

**Figure 3.5**

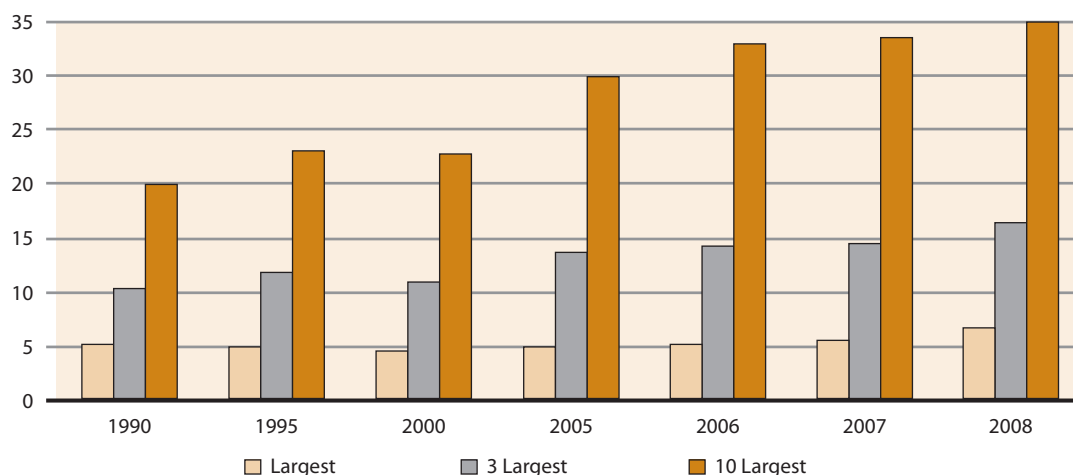
The Top 10 by market capitalization (\$billion at 31 December, 2010)



Source: Capital IQ, cited from Pricewaterhouse Coopers (2011).

**Figure 3.6**

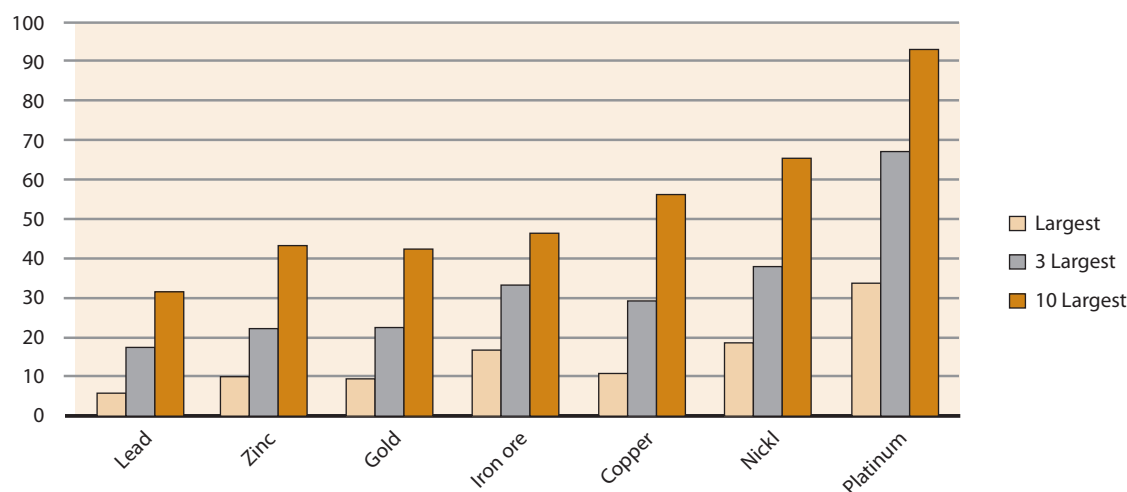
Largest companies' shares of global mining output (per cent)



Source: Raw Materials Data, 2010.

**Figure 3.7**

Largest companies' global control of selected metals, 2009



Source: Raw Materials Data, 2010.

## Exploration and mine development

In 2008, total commercial exploration in the world stood more than five times as high as in 2000, at \$13.8 billion compared with \$2.6 billion. Africa's share of that expenditure increased from 12 per cent (more than \$300 million) to 15 per cent (\$2,050 million). Though declining in 2009, primarily because of the global financial and economic crisis, exploration activities have recovered well, and

should bounce back to 2008 levels according to the Raw Materials Group.

The total project pipeline, including all known projects for which cost estimates exist and which have at least an inferred resource defined, was more than \$465 billion at the end of 2009. Of this, some \$350 billion (roughly

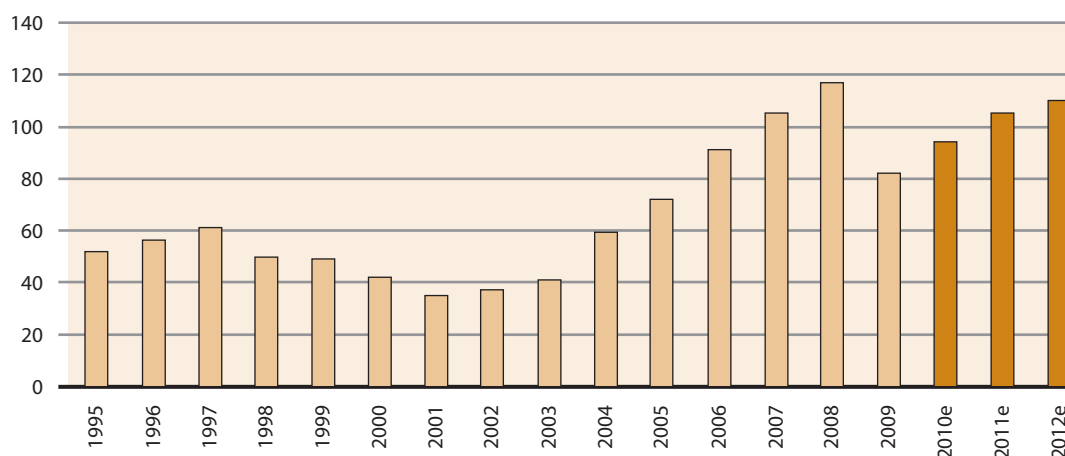
75 per cent) was for greenfield projects, but only \$50 billion represented projects at the construction stage. The majority of projects, with a total investment cost of \$175 billion, were at early and pre-feasibility stages, and those at the feasibility stage were estimated at \$135 billion.

Capital expenditure in the mining industry worldwide fell sharply in 2009 due to the tight conditions created by

the crisis (figure 3.8). Given recent strong metal demand in China since these estimates, the 2009 forecast will probably be surpassed and investment in 2012 might even approach that for 2008. The quick recovery of exploration and mine investment is consistent with the super cycle observations that they are not associated with persisting supply shortfalls.

**Figure 3.8**

Global mining industry capital expenditure, 1995–2012



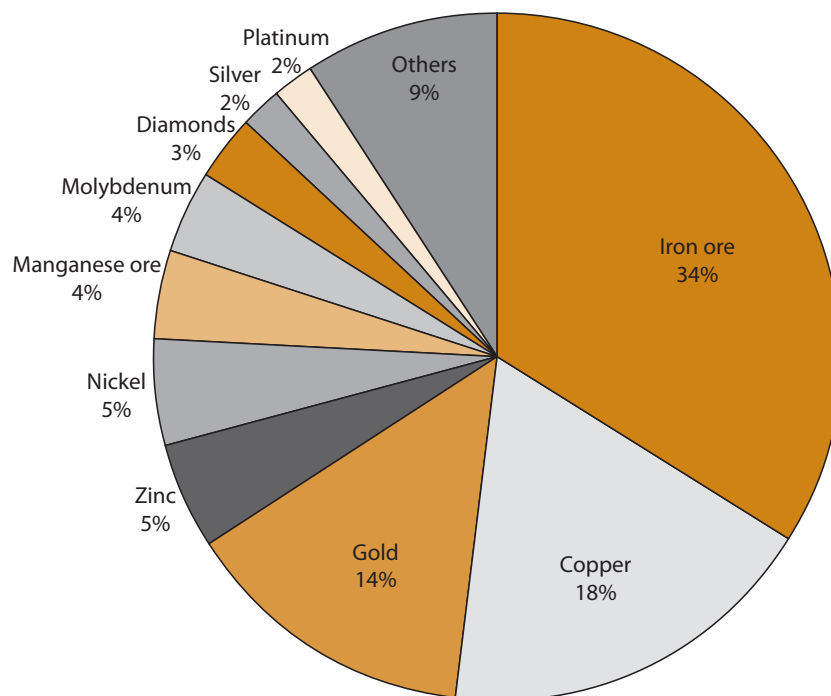
Source: *Raw Materials Data*, 2010.

Three metals account for between half and two-thirds of the total value of all mined metals: iron ore, copper and

gold (figure 3.8). In 2008 the value of all metals, uranium and diamonds at the mine stage was \$465 billion.

**Figure 3.9**

Value of global mine production, 2009



Source: Raw Materials Data, 2010.

Gold projects are often smaller than copper projects, averaging just above \$200 million versus more than \$500 million in 2009. This is because it is still possible to find small but high-grade gold deposits that can be mined profitably by junior or mid-sized companies, while most new copper projects are huge, low-grade, open-pit operations, typically far away from existing infrastructure. Project costs can therefore shoot up if infrastructure costs are included in mine development. Further, given the structure of the gold sector with many juniors and small producers, there is a tendency towards smaller projects, which are easier to finance. The average iron-ore project is even bigger than its copper counterpart, at \$750 million in 2009. The share of mining projects in Africa was fairly constant over the first eight years of the 21st century.

Australian- and Canadian-based companies are by far the biggest spenders on exploration.<sup>3</sup> They are listed on stock exchanges in those countries, which have well-developed

sources of funds for juniors. They are smaller and have a bigger appetite for high-risk exploration programmes. European-based companies are on the other side of the risk profile—more conservative, with a preference for large projects. Historically, exploration and development expenditure exhibits geographical patterns: Canadian and US companies tend to do more business with Latin America, Australian companies in the Pacific and European companies in Africa.<sup>4</sup>

The emergence of China as a source of exploration and development finance in Africa has broadened choices. The China-Africa Development Fund, set up in 2007, symbolizes wider possibilities for financing African projects. The China Development Bank provided initial funding of \$1 billion. The fund aims to support Chinese enterprises when investing in Africa, including mineral resource development.<sup>5</sup>

**Table 3.5****Mining project investment by region, 2009**

	Investment (\$ billion)	Share (per cent)
Africa	68	14.6
Asia	65	13.9
Europe	50	10.8
Latin America	134	28.8
North America	77	16.6
Oceania	71	15.3
Total	465	100

Source: Ericsson and Larsson, *Raw Materials Group Data*, 2010.

## Profiles and control of mining companies

A 2006 estimate of metal mining companies suggested that there were more than 4,000.<sup>6</sup> Most of them were junior companies engaged in exploration only, not extraction, selling their discoveries to bigger and better resourced companies for development. Junior exploration companies are risk takers compared with the larger mine developers and operators, and thus usually precede their larger counterparts. Indications are that the decline

in exploration spending in 2009 was steeper for juniors than for the bigger companies.

State control of global mine output has varied over the years and from metal to metal but was, up to the collapse of the Soviet Union, generally 40–60 per cent. It has declined considerably since 1990 to perhaps 25 per cent, but is certainly not a thing of the past (table 3.6).

**Table 3.6****State share of global metal mine output by value, 2008**

	Total production, 2008 (Percentage of total value of global metal production)	State control, 2008 (Percentage of total value of global metal production)	State share, 2008 (per cent)	State share, 2006 (per cent)	Rank, 2006
China	14.8	14.8	100	100	1
Chile	7.7	2.0	26	32	2
India	5.7	1.6	28	39	4
Iran	0.9	0.9	100	100	5
Poland	0.8	0.8	100	100	3
Uzbekistan	0.7	0.7	100	100	6
Indonesia	2.1	0.6	30	16	7
Venezuela	0.6	0.5	87	80	8
Sweden	.7	0.5	78	50	9
Mauritania	0.3	0.2	75	100	na

Source: *Raw Materials Data*, 2010.

Note: The state share represents the total value of all metal produced at the mining stage. It varies with the produced volumes and with the relative value of the metals produced in each country.

na = not available.

As seen in the table, by far the most important state mining country is China, and the state companies in Chile, India, Indonesia and Sweden (for many years run in the same manner as their private competitors) form the second most

important group of state enterprises. State share holdings among the top 10 producers vary widely. (appendix G and appendix H show the extent of state enterprises in the mining and refining of selected metals between 1975 and 2006.)

## Prices and profits

The period between the Second World War and the mid-1970s was one of unprecedented growth in mineral production and metal prices. The rebuilding of Europe and Japan and the continued industrialization of the Soviet Union created huge demand for mineral commodities. But for 30 years from the mid-1970s, the mining industry saw nearly continuous decline in demand and prices.

Metal prices experienced another boom from 2003–2004 (figure 3.9). As indicated earlier, the super cycle literature takes this to be an early stage of a cycle that is expected to continue for some years yet, despite the decline in 2008.

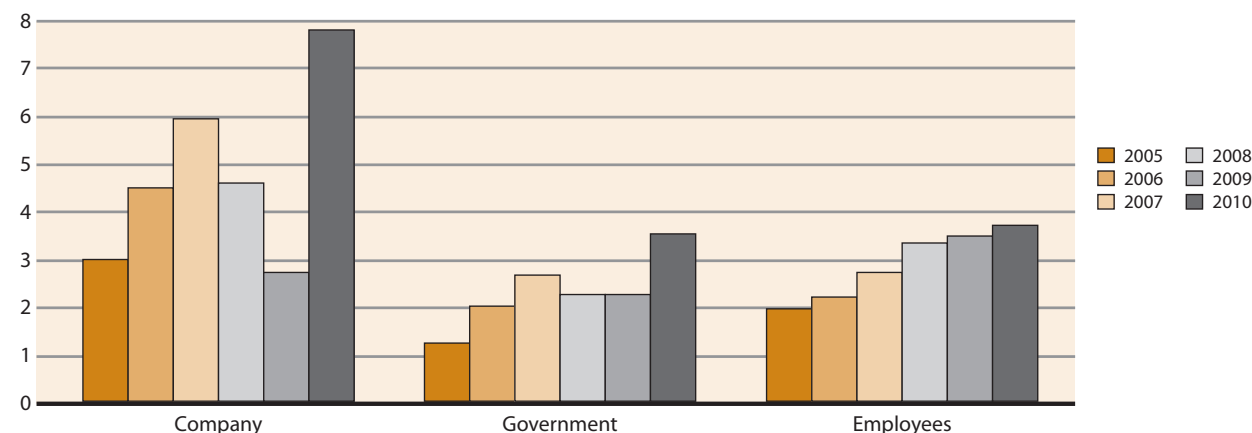
Available evidence suggests a highly successful 2010 in which aggregate net profit for the mining industry increased by 156 per cent to \$110 billion, total assets

approached \$ 1 trillion and overall revenue grew to \$400 billion, a 32 per cent rise.<sup>7</sup> The composition of revenue by mineral commodity, in order of magnitude, was coal, copper, iron ore gold and bauxite.

The figure below presents the global distribution of benefits between mining companies and governments. For Africa, actual government shares of profits are much lower than these as unlike in Australia, for example, African mining countries have not imposed super profits taxes on mining operations, neither do they participate in mining operations (with a few exceptions eg diamonds in Botswana and Namibia), unlike in Latin America. It can safely be concluded, therefore, that the super profits have disproportionately accrued to mining companies and that profit sharing remains a major policy challenge for Africa.

**Figure 3.10**

Average returns by top ten companies, 2005–2010 (\$billions)



Source: PricewaterhouseCoopers, 2011.

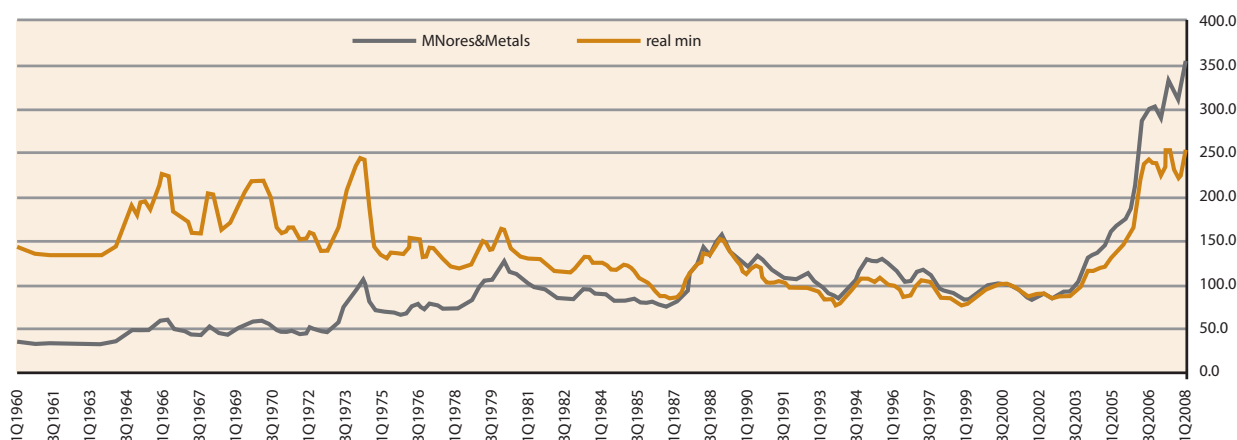
Iron ore and coking coal are by value two of the most important internationally-traded mineral commodities. In the last couple of years both commodities have moved away from a negotiated benchmark price where prices were fixed annually. Instead, prices are set based on spot

prices, quarterly. The trend is hence towards much more fluctuation in prices, which will create new problems for producing countries. This probably demands new strategies and policies to stabilize tax revenue and export income.



**Figure 3.11**

Mineral commodity prices, nominal and real (first quarter 1960–second quarter 2008; 2000=100)



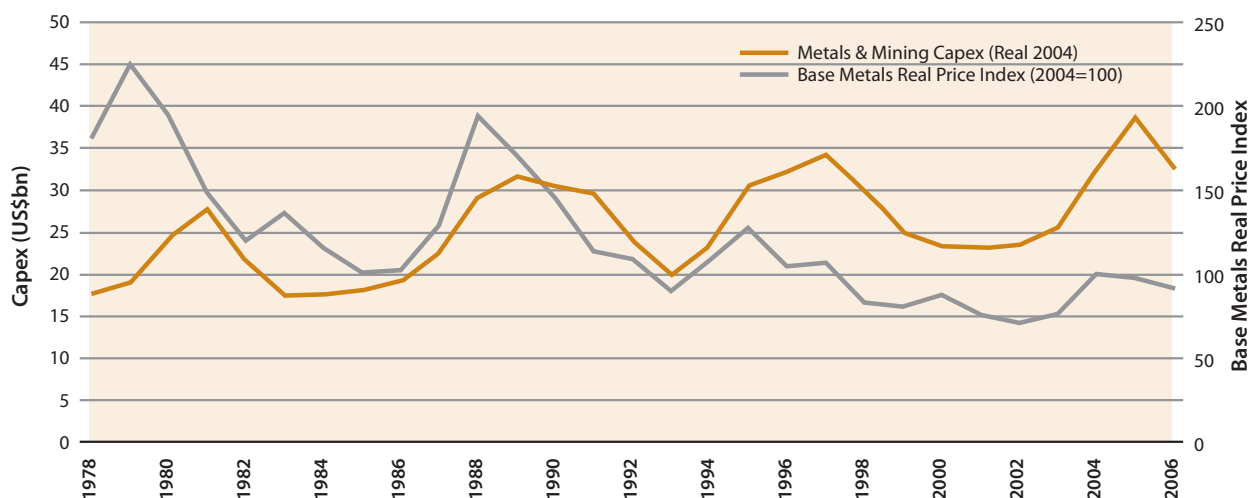
Source: UNCTAD, 2007.

The capital cycle typically lags the commodity price cycle (figure 3.10). The global capital expenditure required for staying in business (the base load) is around \$15 billion a year.<sup>8</sup> The peaks above this base reflect spending on new projects. The 1990s saw excess capital expenditure at a time of a prolonged

depression in commodity markets from the mid-1990s until 2004, though a capital cycle has been under way since about 2004 on the back of improved prices. What is not in doubt therefore is that both exploration and development expenditure, and profitability, are on the upswing.<sup>9</sup>

**Figure 3.12**

Metals and mining capital expenditure and base metal price lag



Source: Heap, 2005.

## Leading global policy initiatives

### The China story

Despite strong growth in domestic production, Chinese import dependence has been growing fast, prompting the formulation of a “two-way strategy” predicated on expanded investment in exploration and production capacity in China; and on outward foreign direct investment (FDI) in mine production and, failing that, long-term supply contracts. The following discussion provides examples of Chinese investment abroad.

In the first half of the 1990s a Chinese group invested in the Dilokong chrome mines in South Africa, in one of the first ventures from that country into African mining. From the mid-2000s Chinese direct investment abroad has increased hugely (see table 3.6). Most investments have been in Australia (table 3.7), with very few in operating African mines.

**Table 3.7**  
Selected Chinese acquisitions in Australian mining

Chinese partner	Australian partner	Mineral
Valin Iron & Steel	Fortescue	Iron ore
Citic Pacific	Mineralogy	Iron ore
Ansteel	Gindalbie Metals	Iron ore
China Metallurgical	Cape Lambert	Iron ore
Baosteel	Rio Tinto	Iron ore
Yanzhou	Felix Resources	Coal
Citic Resources	Macarthur Coal	Coal
Hunan Non-ferrous	Compass Resources	Base metals
CST Mining Group	Lady Anne	Copper
Guangdong	Kagara	Copper
Jinchuan (JNMC)	Albidon	Nickel
Jinchuan (JNMC)	Allegiance Mining	Nickel
Shenzhen Zhongjin Lingnan	Herald Resources	Lead/zinc

Source: *Raw Materials Data*, 2010.

Among minerals worldwide, its focus has been iron ore, followed by copper and nickel. The Belinga project in Gabon operated by China National Machinery & Equipment Import & Export Co. and a bid for the Gara Djebilet deposit in Algeria by Bao Steel are two recent examples of Chinese investment in Africa.

Still, Chinese mining investments abroad are small relative to those from other countries. Less than 1 per cent of total world mine production outside China is controlled

by Chinese companies. (Despite rapid growth in recent years, it was from an almost zero base). It will take years before Chinese companies and China become powerful global players in international mining.

Chinese investors are not homogeneous. They include small firms earning quick profits in the Congolese copper industry to major companies (like Chinalco) cooperating with the leading mining multi-nationals such as Rio Tinto (table 3.8).

**Table 3.8****Selected Chinese acquisitions abroad**

Buyer	Share (per cent)	Target	Metal	Value (\$ million)
Chinalco	9.3	Rio Tinto	Diversified	14,000
Yanzhou	100.0	Felix Resources	Coal	3,200
CIC	17.0	Teck	Diversified	1,500
Shandong Iron & Steel	25.0	Tonkolili	Iron ore	1,500
Chinalco	47.0	Simandou project	Iron ore	1,350
China Mineral	100.0	Itaminas	Iron ore	1,220
Valin Iron & Steel	17.0	Fortescue	Iron ore	939
Chinese investors	51.0	Wesizwe	Platinum	877
Chalco	100.0	Peru Copper	Base metals	800
CRCC-Tongguan	97.0	Corriente	Copper	595
Sino Uranium	na	Somina mine	Uranium	300
CST Mining Group	54.0	Chariot Resources	Copper	240
Jinchuan group (JNMC)	100.0	Tyler Resources	Copper	214
Citic Pacific	100.0	Mineralogy/Korean Steel	Iron ore	200
Xiamen Zijin Tongguan	100.0	Moterrico Metals	Copper	168
JNMC	100.0	Crowflight	Nickel	150
Jinduicheng/Northwest	100.0	Yukon Zinc	Zinc	113
Citic Resources	8.4.0	Macarthur Coal	Coal	96
CNMC	80.0	Luanshya	Copper	50

Source: Raw Materials Data, 2010.

na = not available.

The strong demand for metals from China—and concomitant worries in the traditional industrialized countries of Europe, North America and Japan over threats to future supply—present opportunities to African and other mineral-rich economies from greater demand competition. But to take full advantage, these countries must have the infrastructure capacity, skills and financial resources to manage their mineral capital and the rents it generates.

The number of investment projects in Africa indicates a growing Chinese presence, but progress is often slow. Chinese firms have yet to acquire the experience of large projects that many companies from industrialized countries have.

Informing Chinese policy objectives in Africa is the Forum on China-Africa Cooperation, China's most prominent

development initiative in this field. Since 2000 it has organized high-level meetings every three years with African governments. At the Forum on China-Africa Cooperation at Sharm-el-Shaikh in Egypt in November 2009, China declared five intentions: increasing the China-Africa Development Fund, which then stood at \$1 billion, to \$3 billion; establishing an African commodities trade centre in China to promote export of African commodities to China; making available \$10 billion in preferential loans for infrastructure and social development in Africa; assisting in raising “the value added of the energy and resource products of African countries and enhancing their capacity for intensive processing”; and progressively reducing tariffs on imports of African goods into China.

## Old hands: The United States, EU and Japan

Base metals—including copper and ferro-alloys such as vanadium and ferro-chrome, which are used mainly in specialty steels for weapons—were traditionally considered strategic. In recent years focus has shifted to elements such as gallium, indium and rare earths, used in integrated circuits, cell phones, semi-conductors, coatings, magnets and many other applications. They are nothing like as widely used globally as copper for example—15 million tonnes of copper a year compared with 125,000 tonnes of rare earths—but they are necessary for a high-technology society to function smoothly.

In recent years, the term “criticality” has been coined to express the dependency of industrialized countries on certain metals and minerals, rather than the traditional term “strategic”. A 2008 study defined the newer term, for the United States, as the outcome of two components: importance in use and availability (box 3.1).

The United States, Japan and other global powers have traditionally sought to secure long-term supply of strategic resources, including minerals, through long-term planned political and economic cooperation with key supplier countries, and by strategic stockpiles.

The United States started a programme of strategic stockpiling shortly after the Second World War to supply the needs of US national defence. The stockpile contained large volumes of major metals such as nickel as well as metals of less economic importance but of particular significance for producing war material, such as alloying metals. During the 1990s, after the end of the cold war, the government decided to dispose of the stockpiles and started selling some of the metals. But the Department

of Defense was recently instructed to review the process after reported shortages of metals such as titanium. The Strategic and Critical Materials Stockpiling Act calls for research to develop new domestic sources from ores found in the United States, and the technology needed to process them, and to invest effort in finding substitutes.

Like the United States, the Japanese government has maintained a strategic stockpile for many years. The stockpile has seven metals: chromium, cobalt, manganese, molybdenum, nickel, tungsten and vanadium. The stocks are intended to cover 60 days of demand by Japanese industry. The stockpile is managed by the Japanese Oil, Gas and Metals National Corporation (JOGMEC), set up in 2004. The aim of the Japanese stockpiling policy is not as militarily focused as US policy, but defines criticality as metals that are essential to industry and subject to supply instability.

Updating the aims and methods of JOGMEC, in early 2008 the Japanese government published “Guidelines for Securing National Resources”. JOGMEC will use both Japanese development assistance funds and its own budget to support key projects abroad to secure stable future supply of mineral resources.

The countries in the EU that held strategic stockpiles, such as Finland, France, Sweden and the United Kingdom, have, since the 1990s, disposed of them. Some have replaced them with systematic monitoring of metal markets, including metal supply issues, allowing them to take action if supply is threatened. A number of studies have been published but no concerted action has yet been taken. At present there is no single EU policy in this area.

**Box 3.1****US critical minerals study**

A study conducted under the auspices of the US National Research Council by its Committee on Critical Mineral Impacts on the US Economy was prompted by concerns about the adequacy of government support “both to understand the non-fuel minerals that are important to the nation’s economy and functions, and to collect non-fuel mineral data for making informed policy decisions that help to avoid restrictions in ... supply” (p. x). (Although focusing on the United States, the report suggests an approach useful for other countries.)

Among conclusions from previous studies that the authors found “most compelling” (p. 25) are the following:

- The United States is a major user and producer of mineral commodities, and the economy could not function without minerals and the products made from them;
- The federal government has a responsibility to conduct and support research and to gather and disseminate information on minerals and metals;
- Market forces alone are insufficient to meet challenges of sustainability, so the federal government should help to facilitate activities that sustain mineral supplies, including exploration, development, technology, recycling and appropriate environmental protection; and
- The federal government should maintain core competence in the knowledge of mineral deposits and related environmental research, as well as information collection, to respond to future national needs.

The study report draws a distinction between “strategic” and “critical” minerals. A mineral is strategic if it is required to satisfy national security and military needs and the demands of national emergencies. Criticality, on the other hand, covers a broader range of circumstances: it seeks to identify minerals that are important in significant uses in the US economy and society, and the chances of supply constraints having a substantial adverse impact. Criticality is a dynamic concept in that what was critical yesterday may not be critical today, and what is not today can become critical tomorrow.

In determining the importance in use of a mineral, the report proposes, analysis should consider three main factors: the demand for products in which it is used; the physical and chemical properties that make it useful for the key products in which it is used; and how easy it would be to provide a substitute source or an alternative material in the production process for those key products (in performance and cost). On availability and reliability of supply, five main areas need to be investigated: geological, technical, environmental and social, political and economic.

In applying the method proposed to various minerals, the report concludes that, although copper is widely used and its substitutes do not perform as well in key products, it cannot be characterized as critical because it is available from diverse sources and the risks of supply disruption are low.

Three of the platinum group metals (platinum, palladium and rhodium), though used in smaller quantities, are high in importance. The probability of a supply restriction is also rated as high, partly because production is controlled by a few companies in a few countries and partly because the jurisdictions in which they operate do not discourage anti-competitive behaviour. “Inventories tend to be low, because of their high value and significant price and other risks. North American production would be inadequate to supply critical needs if the supply of platinum and rhodium from South Africa was interrupted” (p. 142). The report thus assesses them to be critical to the United States.

*Source: National Academies Press, 2008.*

For several decades towards the end of the 20th century, metal supply for Europe held no interest for politicians. Metals and minerals were freely available on the world market at attractive and falling prices, and industry could import all it needed from abroad more cheaply than from European mines. But with the boom that started in late 2003, a paradigm shift occurred arising from its potential to undermine European metal supplies. The boom will have a profound impact on African countries, and the EU will attempt to gain maximum advantage in securing its raw material supply from its former African colonies. African governments need to monitor carefully the effects on African mineral-rich countries of the actions suggested under the EU Raw Materials Initiative (box 3.2).

## India

The recent scale of India's trade and investment flows with Africa is unprecedented.<sup>10</sup> India–Africa trade grew rapidly from \$3.4 billion a year in 2000 to \$30 billion a year in 2007, for example. India's historic business interests in Africa were largely driven by small and medium enterprises and traders, but it is the Indian multi-nationals that have shown increasing interest recently in Africa, reflecting India's increasing outward FDI generally. Most of these companies have made large investments in extraction. A large proportion of Indian FDI has also gone into infrastructure.

Vedanta Resources, for example, a publicly-traded metals conglomerate founded in Mumbai in 1976, has invested more than \$750 million in Zambian copper mines. In Senegal a joint public–private Indian group has invested \$250 million in exchange for a stake in a colonial-era enterprise, Industries Chimiques du Senegal, with rock phosphate mines and plants to produce phosphoric acid for agricultural uses. Indian companies such as Tata Steel invested 650 million rand in a ferro-chrome project in Richards Bay, South Africa in 2006,<sup>11</sup> and Taurian Resources has recently invested in exploration for manganese in Côte d'Ivoire and for Uranium in the Niger.<sup>12</sup>

The sustained increase in commodity prices coupled with increasing demand for energy and raw materials in India seem to be the major driving forces for these companies. Particularly for oil and energy companies, the quest for

One avenue through which they can do this is the series of College to College African Union Commission–European Commission meetings. The fourth meeting, in Addis Ababa, Ethiopia, in June 2010, issued a declaration to “develop a bilateral cooperation in the field of raw materials and work together, taking fully into account the AMV of February 2009 and the EU Raw Materials Initiative of December 2008, to the elaboration of further progress and initiatives, in particular on issues such as governance, infrastructure and investment and geological knowledge and skills”. EU interest in Africa's mineral endowment is no longer a non-issue.

energy security is one of the major factors for investing in Africa.<sup>13</sup> India is the fifth-largest consumer of energy in the world, accounting for about 3.8 per cent of global consumption. With rapid economic growth and industrialization, it is expected to double its energy consumption by 2030, overtaking Japan and Russia to become the world's third-largest consumer (after the United States and China).<sup>14</sup>

The security of Indian Ocean sea lanes is also an area of concern for India, which has traditionally seen the Indian Ocean as its strategic backyard. This also drives India's desire to strengthen its presence in Africa.<sup>15</sup>

India does not appear to have formulated as strong a policy as China to promote and engage strategically with Africa,<sup>16</sup> perhaps because Indian initiatives have until recently largely been driven by private companies.<sup>17</sup>

Still, the first India–Africa summit in New Delhi in April 2008 indicated a serious push from the government to strengthen its ties with Africa.<sup>18</sup> The Export-Import Bank of India (Exim Bank) provides lines of credit to Indian businesses investing in Africa. It also works with the African Development Bank. The Confederation of Indian Industry, with the government and Exim Bank, runs an annual Conclave on India–Africa, which provides a platform for business and government meetings.

**Box 3.2****Extracts from the EU's Raw Materials Initiative, 2008**

Raw materials are essential for the sustainable functioning of modern societies. Access to and affordability of mineral raw materials are crucial for the sound functioning of the EU's economy. Sectors such as construction, chemicals, automotive, aerospace, machinery and equipment sectors which provide a total value added of 1,324 billion EUR and employment for some 30 million people all depend on access to raw materials.

... The EU is highly dependent on imports of strategically important raw materials which are increasingly affected by market distortions. In the case of high-tech metals, this dependence can even be considered critical in view of their economic value and high supply risks. At the same time, a significant opportunity exists for securing material supplies by improving resource efficiency and recycling.

Securing reliable and undistorted access to raw materials is increasingly becoming an important factor for the EU's competitiveness and, hence to the success of the Lisbon Partnership for growth and jobs...

... It is proposed that the EU should agree on an integrated raw materials strategy. Such a strategy should be based on the following 3 pillars:

- Ensure access to raw materials from international markets under the same conditions as other industrial competitors;
- Set the right framework conditions within the EU in order to foster sustainable supply of raw materials from European sources; and
- Boost overall resource efficiency and promote recycling to reduce the EU's consumption of primary raw materials and decrease the relative import dependence.

... The EU should actively pursue *raw materials diplomacy* with a view to securing access to raw materials... In particular:

- With Africa, by reinforcing its dialogue and actions in the area of access to raw materials and on natural resources management as well as transport infrastructure, within the implementation of the Joint Strategy and Action Plan 2008–2010;
- With emerging resource-rich economies such as China and Russia, by reinforcing the dialogue, including with the view to remove distortive measures; and
- With resource-dependent countries such as the US and Japan, by identifying common interests and devising joint actions and common positions in international fora, e.g. joint projects with the US Geological Survey in areas open to international cooperation.

**Source:** *Commission of the European Communities, 2008.*



## Latin America

**From state to markets: The Chilean and Latin American model.** Economic reform and liberalization in Latin America in the 1980s and early 1990s, especially in mining, triggered a wide transformation of the structure and geography of mining investment. State-owned companies—leading mining actors in developing countries until the late 1980s—were restructured, either by outright sale to private buyers or by a range of cooperative arrangements between state and private companies. Some mines became joint ventures; others were run under private-company long-term management contracts. The industry thus increasingly operated in a more open economy.

Such privatization was undertaken against the backdrop of low mineral prices in an economic environment where countries faced external debt crises. For most of these countries—and as advised by international financial institutions led by the World Bank and the International Monetary Fund—attracting foreign investment was the only way of increasing exports and earning more foreign currency.

Chile set the basis for reforming its mining industry in the early 1980s, far ahead of other developing countries. The general features of its legal and fiscal mining regime inspired reforms elsewhere in the region, particularly Bolivia and Peru and, to some extent, Argentina,

**Ecuador and Mexico.** The overall features of their mining legislation were commended as “best international practice” in the general regime and in the regulation of minerals exploration and exploitation in the context of global competition to attract private investment. Countries such as Bolivia, Chile and Peru were also among the first to revise their mineral regimes, including tax elements, to consider the present boom and to secure a larger share of the high mining profits for host countries.

**Rethinking the market-driven model.** The disappointing results of policy reforms in the 1980s and 1990s, as well as criticisms from international policy debate, led to the recognition in the 1990s that the initial reform package would have to be supplemented by measures to mitigate the adverse effects of reforms.

Starting in the 2000s, the United Nations Economic Commission for Latin America and the Caribbean developed a vision for strengthening the role of the state and for reorienting its goals towards supporting and redesigning institutions by, for example, policy actions to ensure access for weaker players in the economy. The Economic Commission suggests that Latin American countries should upgrade their FDI policies and institutions to compete more successfully, moving away from a “beauty contest” designed to attract all possible FDI, towards a more development, targeted approach that calls for countries to define national priorities and to identify and attract the kind of FDI that contributes to development goals.

The environment stayed low on the agenda of most Latin American countries given the political and economic crises of the 1980s, but since the 1990s impetus for environmental regulation has come from:

- Trends and developments in international law, and the ratification of core international environmental instruments;
- Increasing concerns for the negative impacts of mining raised by the boom in mining;
- The privatization of state mining enterprises; and
- Practices (and requirements) brought by international organizations involved in legal reform.

Latin American countries embraced the challenge of sustainable development, as acknowledged in the 1994 Summit of the Americas, and as reinforced in the action plan approved in the 1996 Declaration of Santa Cruz de la Sierra.<sup>19</sup> These documents recognize the task of creating an environmentally-responsible and socially-sensitive minerals and metals industry, bearing in mind the key role of mining in the development of the region. They also highlight the need for policymakers to incorporate sustainable development concepts when designing public policies, including legislation, and for governments to strengthen national enforcement of international and national laws and regulations. Regional mining initiatives, such as the

Mines Ministers of the Americas Annual Conference, echoed those concerns. The aim of the association shifted from investment attraction, the overall aim in the 1996 Declaration of Santiago, towards promoting sustainable development in Latin America in the second conference held in Arequipa in 1997.

The 2000 Declaration of Vancouver contains a number of recommendations for the implementation of sustainable development. These include: supporting and strengthening community participation in the assessment of opportunities and challenges in mining projects; ensuring the full use of legal mechanisms for public participation; and considering mine closure, and a formal plan for closure, from the outset of each project, in order to enable mining to contribute to sustainable development. Although these initiatives are not binding, they reflect the view that the region embraces the challenge of sustainable development in the mining sector. Actual implementation is, however, somewhat patchy and mainly focused on environmental aspects.

*Brazil.* Brazil has deep cultural and historical links with Africa and with mining. During the 18th century, for example, many of the millions of African slaves sent to Brazil worked in diamond and gold mines. More recently, Brazilian interest in investing in Africa has increased dramatically, as has bilateral trade: from 2000 to 2008 its imports surged from \$3 billion to \$18.5 billion, and its exports from \$1 billion to \$8 billion.<sup>20</sup>

## Policy implications

Following a long period of decline, mineral commodity prices and investment experienced a boom that began in 2003 and is projected to continue for some years yet. Unprecedented demand driven by large developing-country industrialization, particularly China, has created an anxious global environment over security and reliability of mineral supply. The historic mineral-importing countries in Europe, Japan and the United States, alongside newcomers China and India, have begun to focus—in competition—on ensuring access and security of supply for strategic mineral resources. Many governments have politically and financially backed investment in mineral

Brazilian companies have invested approximately \$10 billion in Africa since 2003. The Brazilian mining company Vale, for example, has acquired a 51 per cent stake in BSG Resources of Guinea in a \$2.5 billion cash deal that gives Vale access to iron-ore concession and exploration rights.<sup>21</sup> It is also preparing to begin operations for a coal mine near Tete in Mozambique, with an initial investment of \$1.3 billion, and is working with Odebrecht, a Brazilian construction company, to develop the coal reserves, build a power station and construct a railway (to pass through Malawi) and port infrastructure.<sup>22</sup>

Brazilian steelmaker CSN has bought a 16.3 per cent stake in Riversdale, an Australian mining company, which is also planning a multi-billion dollar investment in Tete, Mozambique.<sup>23</sup> Brazilian investment has been backed by political support, especially during the administration of President “Lula” da Silva (2003–2010), who visited Africa six times in his first five years in office, often accompanied by business leaders.

Brazilian embassies in Africa have been expanded, as Brazil positions itself to expand its resource and agricultural assets. Its interest in Africa reflects its desire for resource and agricultural security, economic growth (by expanding its developing-country industrial expertise into the African market), and a political “South–South” strategy.

resources globally, including those in Africa. Supported by an upswing in liquidity, the capital cycle is showing an upward trend, with multi-national mining companies making large investments in new and existing capacity.

Africa’s mining companies and mineral-rich countries thus have a unique opportunity to formulate cooperative solutions. For companies, the circumstances offer increased profitability, lower investment risks and greater access to capital. For governments, the conditions offer the opportunity to capitalize on their natural resource endowments.

But strategies are required to introduce remunerative licensing and tax structures that take account of increased revenue flows (from royalties and other taxes), as well as higher returns (from any equity participation or from state-owned companies). Governments have the opportunity to use their stronger revenue flows to catalyse wider economic development, and may want to consider some of the global mining trends—and the implications for Africa—outlined in this chapter:

- Africa has some of the world's largest mineral reserves and is one of the few largely unexplored regions left. What are the unique opportunities that arise from the current confluence of increasing demand, rising prices and improving liquidity for mineral resource projects?
- Africa is being courted by suitors all looking for reliability and security of supply of mineral commodities. All have a clear and focused strategy on what they want from Africa, but Africa has to develop a coherent strategy in reply. How can Africa leverage the heightened competition for its natural resources

to extract development benefits beyond tax revenue and dividend flows?

- Large emerging countries such as Brazil, China and India are expanding in Africa's natural resource sector. These countries have recent experience in overseeing social and economic development in a developing-country context, which provides an opportunity for Africa to learn from their knowledge in this area and to benefit from their experience, provided that the continent's mineral strategy facilitates this; and
- The pattern of mining reforms and investment in Latin America, particularly after the World Bank-led reforms of the 1980s maintains some similarity with African history in this area. Latin America is showing a new move towards strengthening the role of state institutions, focusing on national priorities and economic development objectives. It is also increasingly aware of sustainability in development, particularly environmental and social issues. Latin America's experience holds some lessons for Africa.

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# Mining in Africa: managing the impacts

## 4 CHAPTER

*“A transparent and inclusive mining sector that is environmentally and socially-responsible...which provides lasting benefits to the community and pursues an integrated view of the rights of various stakeholders...is essential for addressing the adverse impacts of the mining sector and to avoid conflicts induced by mineral exploitation. Public participation in assessing the environmental and social impacts and the enforcement of impact assessment requirements is important in tackling these challenges”*  
— The Africa Mining Vision

**THE FAILURE OF** decades of mineral exploitation to contribute significantly to socio-economic development on the continent has been dealt with in earlier chapters. This chapter reviews the impacts and challenges of mining

operations, with specific focus on environmental, human and social issues. It discusses the key impacts of mining activities and provides possible avenues of addressing them. The chapter emphasizes the need to promote a mineral sector that contributes to sustainable socio-economic development in Africa by addressing current issues and anticipating future adverse environmental and social impacts.

Although negative impacts from mining activities are inevitable, it should be noted that most of them can be avoided during the mining cycle (during the pre-development, development and post-development stages) if prevention and mitigation measures are established. Lower adverse impacts and risks often translate into lower costs of doing business—and offer opportunities for building relationships with local communities, leading to reduced conflict between the mining industry and those who work or live near mines.

It is also clear that there is a direct link among environmental impacts, human rights violations and obstacles to sustainable development in mining. But lessons from Africa, and elsewhere, indicate that strong transparent and participatory governance processes, at all levels, can assist mineral-rich countries attain sustainable economic growth and good environmental practices through applying and enforcing human rights, labour and environmental norms and standards.

## The environmental and social impacts of mining

### The environmental impacts

Mining activities accelerate the rate and degree of changes in the natural environment, such as the ecosystem. The activities modify landscapes and can have long-term impacts on communities and natural resources due to their physical degrading nature, as well as their use of chemicals and other harmful substances. It has been noted that the environmental effects of extractive projects are influenced by the type of minerals extracted, the technology used, the scale of extraction activities and the location of the projects. The environmental impacts also depend on the geological structures and the techniques of extraction.

Africa retains the environmental burden of mining, whose effects also reduces whatever it receives from the benefits of its minerals. Kuhndt et al. (2008) note a “significant shift in European resource requirements from domestic sources towards the use of imports from developing countries”. They observe that this is accompanied by “a shift of environmental burden of resource use. ... While the resource productivity in EU countries is increasing, developing countries struggle to cope with the environmental impacts of rising extraction rates: huge amounts of waste, wastewater and dissipative losses”. The legacy of mining in Africa is generally that of large unfilled holes and abandoned artisanal mining sites.

Many of the environmental problems associated with mining stem from the contamination of, and competition for, surface and groundwater. Water contamination from mining activities is caused by the discharge of effluents, which contain toxic chemicals used in the processing of mineral ores—such chemicals as cyanide, organic chemicals and leached heavy metal oxides (including lead and zinc oxides). The effluents may also have high levels of acidity. Mine effluents can seep into water bodies, posing dangers to communities and aquatic life. And chemicals in effluents can potentially contaminate ground water. The quality of, and access to, water is especially critical when mining occurs close to agricultural and/or fishing communities. Further water pollution occurs from Acid Mine (Rock) Drainage, which takes place particularly

when mine dumps and acidic host rock in mined areas come into contact with water, increasing its acidity.

Mining is also invariably associated with deforestation, soil erosion, land degradation, air pollution and ecosystem disruption, particularly so for open-cast mines in which large areas of vegetation and soil are removed. Tailings dumps and other mining waste add to environmental problems often due to a general lack of waste management. Such dumps, as well as mining sites, also limits available land use options. Extracting and using fossil fuels containing hydro-carbons significantly impact climate change. Coal production for the generation of electricity, particularly in southern Africa, causes the significant emission of greenhouse gases which are primarily responsible for climate change.

UNEP (2008) documented examples of major environmental impacts of mining, including:

- The extensive land affected by diamond mining in Angola, where “the Catoca kimberlite pipe... is the world’s fourth largest in terms of surface area, with diamond reserves of at least 40 million carats” and “for each carat recovered, more than a tonne of material is moved”;
- The effect on the ecosystem caused by mining in the forest reserves of the Democratic Republic of the Congo;
- The constraints on alternative uses and users of the extensive allocation to large-scale mining of land in the Wassa West District in Ghana;
- The threats to human health from uranium mining in the Niger;
- The widespread air, soil and water pollution in the Zambian copper belt from “digging, pumping and disposal of large volumes of waste water, and smelting operations that emit sulphur dioxide”; and

- The problems created by mining in South Africa, including acid mine drainage and the land area covered by mining waste.

The large artisanal and small-scale mining sector in Africa contributes to major environmental challenges, especially the impact on the physical environment (river siltation and lands not reclaimed) and the health effects from exposure to mercury and cyanide (for gold miners).

Box 4.1 considers the potential threats from bauxite mining and processing in an ecologically-sensitive area in the Republic of Guinea.

Among the environmental impacts of mining, climate change deserves special mention because it is one of the major global environmental problems in the 21st century that demands urgent attention. As stated earlier, extracting and using fossil fuels containing hydro-carbons significantly impact climate change. Mining is one of the most intensive users of heavy fuel oil, while coal mining for the generation of electricity leads to substantial emissions of greenhouse gases. Thus aggregately, mining is a major contributor to global warming.

Although African countries as a group contribute fairly little to global warming, they are disproportionately affected by changing climatic conditions. Along with their economic weaknesses, their geographical location—and high dependence on natural resource-based commodities as a source of local livelihoods and national income—render them particularly vulnerable to climate change.<sup>1</sup> In this regard, African developing countries are confronted with two major challenges in responding to climate change: financing and implementing investment in appropriate activities, and generating, diffusing, and disseminating relevant technology.

The mining industry operating worldwide could make valuable contributions to climate change mitigation in Africa. But policy elements to harness industry contributions (such as investment and technology) remain largely absent from international and national investment policies. So, there is a need to synergize these two areas of policymaking, with a view to galvanizing low-carbon investment for climate change mitigation and enhancing adaptation possibilities. Low-carbon policies, including measures targeting transnational corporations and foreign investment, such as mining companies, must thus

### **Box 4.1**

#### **Mining a hotspot: Sangaredi Mine, Guinea**

The Sangaredi Mine in the Upper Guinea Forest falls within one of the world's most biologically-rich, yet seriously threatened, ecosystems. Recent biological assessments of the area surrounding the bauxite mine and proposed alumina processing facility identified 5 reptile species, 17 amphibian species, 140 species of birds, 16 species of mammals and 8 primate species, including the endangered West African chimpanzee and western red colobus. The Sangaredi Mine is Guinea's largest and most profitable mine. A proposed alumina refinery, about 25 kilometres west of the mine, is expected to bring a \$3,000-million capital investment, thousands of jobs, and infrastructure development. The consortium, building the refinery, is working with Conservation International to incorporate ecological considerations into the plans. A biological assessment of the area was conducted as a part of the process.

Bauxite mines and alumina refineries typically create serious ecological problems. Bauxite ore is mined in open pits, requiring the removal of vegetation and topsoil. The Sangaredi Mine is a vast open pit approximately 20 kilometres from one end to the other. Alumina refining produces highly caustic "red mud" that negatively affects surface and groundwater quality. In addition to direct environmental impacts, the increased population and infrastructure development associated with the mine will likely put immense pressure on this environmental "hotspot."

**Source:** UNEP, 2008.



be incorporated into national economies and sustainable development strategies. These companies are in a prime position to diffuse cleaner technologies and processes in their own operations overseas, as well as through their value chains. Beyond improving their own processes, large-scale mining companies can potentially provide the know-how for emission mitigation in the small and medium mining sectors.

Box 4.2 includes information on the Clean Development Mechanism and the opportunities that it could offer mining companies operating in Africa to enter into the emerging carbon market, and overall contribute to mitigation initiatives towards reducing greenhouse gas emissions in the energy intensive mining industry.

### Box 4.2

#### The Clean Development Mechanism and the mining industry

The Clean Development Mechanism (CDM), established under the Article 12 of the Kyoto Protocol allows Annex I parties (industrialized countries) to obtain emissions credits for projects that reduce emissions in developing countries (non-annex I countries). The main idea is that the project implemented will generate environmental benefits, such as reducing greenhouse gas emissions or removing carbon dioxide through transferable financial assets (certified emission reductions). The project should reduce emissions more than would have occurred without it, ensuring real, measurable and long-term benefits for climate change mitigation. So, such projects must reduce greenhouse gas emissions or increase the removal of carbon dioxide—and can involve the replacement of fossil fuels with renewable ones, rationalization of energy use, afforestation and reforestation activities and more efficient urban services, among others. Projects must involve one or more of the gases listed in annex A of the Kyoto Protocol related to various sectors/sources of activities. And the projects should help the developing countries achieve their sustainable development goals. To date, more than 2,250 projects in 68 countries have been registered, and more than 420 million credits have been issued. East Asia and the Pacific and Latin America and the Caribbean account for most projects.

Under the CDM the mining industry is presented with new opportunities, including developing new technologies and products and accessing the new emerging carbon market. Many developed countries have initiated CDM projects in developing countries, ranging from such sectors as renewable energy industries, manufacturing industries, chemical industries, afforestation and reforestation, agriculture and transport. The CDM offers possibilities for mining transnational corporations to enter the emerging carbon market. But realizing the potential of the CDM projects in the extractive sector will require large-scale CDM projects, particularly in the mining sector, which typically involves large projects.

The Beatrix methane-capture project in South Africa offers an example. Gold Fields Mining Company, owner of Beatrix Gold Mine, is implementing a carbon credit project to capture and destroy the mine's methane emissions. The Beatrix methane-capture project, one of the first involving mining firms to be approved by the Designated National Authority for the Clean Development Mechanism in South Africa, aims at mitigating the environmental impact of mining activity at the mine with regard to greenhouse gas emissions to generate carbon credits and then to use methane for power generation. The project includes a scheme to capture and extract methane gas from underground at the south section of the mine, as well as to capture and flare methane gas from identified surface boreholes. Flaring of the gas was scheduled to take place by the end of 2009.

*Source: Yupari, 2010a, 2010b; Gold Fields, 2010.*



## The social impacts

Mining operations also generate social impacts that can lead to tension and conflict in mining areas. For example, during the exploration and mine development phases, land tenure and access, road construction, river diversion and the large influx of people from outside the mining area, such as foreign workers, can all contribute to disrupting the lifestyles of local communities and being a source of resentment. These issues are particularly intense in small-scale mining communities where the lack of well-defined concession boundaries and influx of people from other communities responding to lucrative mineral finds usually results in tension.<sup>2</sup>

Several adverse social impacts of mining can be identified, which will include:

- Displacement of populations and resulting disruption of livelihoods;
- Increased poverty—for example, through a degraded environment on which community subsistence may depend;
- Increased internal economic inequalities—for example, between men and women, between those with jobs at the mine and those without and between communities receiving royalty payments and other benefits and resource rents and those who do not; and
- Economic dependency as local economic activity is reorganized to meet the needs of the mine, leaving the community vulnerable to a typical “boom and bust” economy, especially when the mine closes down or experiences reduced profitability as a result of low commodity prices.

Increased poverty and economic inequalities and dependencies can destabilize internal community power relations—and disrupt traditional social structures, resulting in increased gender inequality due to unequal access to jobs in the mine, the loss of male support for household work and women expending more energy accessing safe water and food because of degraded environments. At the national level, countries can get locked in an inequality

trap, unable to diversify the economy in ways that reduce inequalities.

Increased poverty and economic inequalities and dependencies can also exacerbate social issues, such as increased alcohol and drug use, prostitution, gambling and loss of internal cultural cohesion. A large influx of outsiders or immigrant miners, not integrated into the local community or subject to its social constraints, compounds the problem. Such outsiders, for example, can potentially get into conflict with native residents due to different socio-cultural values as well as competition over limited local resources.

Poverty and economic deprivation can lead to a general loss of development choices and options, eroding power over community decision-making, and a loss of control over the future of the community and its assets. This challenge is best illustrated by the violence experienced in the Niger Delta, where youth violence and the existence of militias are partly attributed to feelings of loss of community assets and perceptions of exclusion from natural resources development. The United Nations Development Programme’s 2006 Human Development Report on the Niger Delta points out that the Niger Delta is the most volatile region in Nigeria. Although rich in oil resources, the Niger Delta was rated very low in the human development and human poverty indexes, reflecting the under-developed nature of the communities in the area.

Displacement and forced eviction or re-location are common features of mining operations. Mining activities, including waste disposal sites, compete for space with other land uses such as farming, which can easily become a source of tension among the mine, farmers and local communities. Resolving this requires that compensation be given to those whose interests give way or are constrained by mining. Compensation may be in monetary payment, resettlement, the provision of job opportunities, training or alternative livelihood schemes. The adequacy of the compensation requires careful consideration through agreed-upon valuation methods. Disrupting livelihoods through forced resettlement to make way for mining

operations has potential to create long-lasting tension between communities and mining companies.

Other social impacts of mining can result from militarizing mining areas to protect a mine's assets, potentially in response to local protests against mining operations, existing conflicts with local militant groups or scavenging by poor communities. Militarization can generally lead to human rights abuses, especially those brought about by increased sexual violence and forced relocation.

In addition to conflict between a mine and community, mining can be the primary driver of severe conflict, with armed groups fighting for control over mineral spoils. The potential monetary gains can lure foreign rebel groups and mercenaries into the fighting and broaden existing conflicts. Methods used by armed groups to exploit minerals include extorting or "taxing" mining companies and intermediaries, directly operating mineral extraction sites

and selling "future" concessions of mineral rights in anticipation of gaining control upon successful campaigns. Often serious human rights violations are involved such as using forced labour, targeting civilians.

Complex intermediary trade networks and inadequate documentation make tracking sources of conflict minerals difficult. Those minerals which are difficult to regulate and trace, easily extracted, valuable and easy to transport, are most susceptible to exploitation in conflict situations. Common minerals involved include gold, tin, diamonds and coltan. Conflict situations not only can pose additional risks and costs for the mining industry, but also can encourage mining firms with higher risk tolerance and lower reputation concerns to be involved. Such firms are much more likely to have poor industry practice in environmental, human rights and fiscal performance. Well-known instances in Africa of wars in which minerals are at the core have occurred in Angola, the Democratic Republic of the Congo, Liberia and Sierra Leone.

## Regulating the environmental and social impacts of mining

The environmental impacts of mining now receive much greater emphasis in policy prescriptions than they did two decades ago. Developing a framework that adequately incorporates environmental issues into the evaluation of the costs and benefits of a mining project has evolved significantly in the last 20 years. But applying standard instruments for assessing and regulating impacts has not developed much in many African countries. This is complicated further because applying environmental management tools requires skills, technology and financial inputs not necessarily available or catered to by governments. These limits are even more pronounced in relation to monitoring capacities and the evaluation of social costs,

particularly those borne by mining communities close to mining operations.

Many domestic legal systems and international law instruments contain provisions: protecting designated nature and cultural sites and limiting or prohibiting mining operations therein; requiring impact assessments before permitting certain activities; setting standards such as those relating to air and water quality or prescribing limits on discharges into water or emissions into the atmosphere; imposing requirements for mine closure and imposing compensation requirements for disrupting other forms of livelihoods, including dislocation from land.

### Protected areas

The classification of protected areas by the International Union for the Conservation of Nature and Natural Resources (IUCN) is one of the most prominent systems for designating such areas (box 4.3).

In October 2000 a resolution was adopted at the World Conservation Congress in Amman, Jordan, recommending that member States "prohibit by law, all exploration and extraction of mineral resources in protected areas corresponding to IUCN protected area management categories I–IV".<sup>3</sup>

**Box 4.3****International Union for Conservation of Nature protected area categories****Category Ia:** Strict nature reserve

These are protected areas set aside principally to protect biodiversity and where human visitation, use and impacts are strictly controlled and limited.

**Category Ib:** Wilderness area

These are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation. They are protected and managed so as to preserve their natural condition.

**Category II:** National park

Category II areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally-compatible spiritual, scientific, educational, recreational and visitor opportunities.

**Category III:** Natural monument or feature

**Category III** protected areas are set aside to protect a specific natural monument, such as a landform, sea mount, submarine cavern, geological feature or even a living feature such as an ancient grove. They are generally small protected areas and often have high visitor value.

**Category IV:** Habitat/species management area

Category IV protected areas aim to protect particular species or habitats.

**Category V:** Protected landscape/seascape

A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value, and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

**Category VI:** Protected area with sustainable use of natural resources

Category VI protected areas conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a part is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is one of the main aims of the area.

*Source: Dudley, 2008.*

Mineral operations in protected areas have been controversial in Africa, particularly for forests. Elements of the controversy relate to forest area in which it is, or should be, classified as a strict reserve or one in which certain forms of productive activity are permitted—and, if so, what forms of mineral operations (if any) should

be allowed. That immediate financial needs or desires of governmental authorities and the power of mining companies may override legitimate environmental concerns with long-term implications sometimes creates a charged context for decision-making.

## Environmental and social impact assessments

Internationally-accepted impact assessment tools have enabled mining companies to adequately factor in environmental and social considerations in investment decisions. Environmental Impact Assessments (EIAs) and Social Impact Assessments (SIAs) have become integral parts of investment assessment methodologies, previously focused largely on financial criteria. The recommendations of the UN Conference on Environment and Development in 1992 re-emphasized the use of impact assessment instruments and reinforced the aspirations of the Berlin Guidelines of 1991 on environmental stewardship. Increasingly, the impacts of assessments cover the effects on flora and fauna and on human health, as well as broad socio-economic impacts of mining both directly and indirectly. International finance institutions have developed methods to ensure that mineral industry investors adequately account for these environmental and social impacts in the project evaluation framework. (A summary of the provisions incorporating environmental considerations into the mining regimes of several African countries is shown in appendix I.)

Applying instruments for impact assessment of specific projects in the legal systems of many countries has progressed. As noted earlier, requirements for EIAs and SIAs and the use of environmental bonds are now standard in most mining regimes. The challenge is the capacity of government to enforce these requirements. Methods for evaluating less visible impacts, such as on groundwater systems, are not as well elaborated or incorporated as those for more obvious impacts, such as relating to surface land or emissions into the atmosphere. Strategic impact assessment, which involves the effect of proposed policy measures on a cluster of projects (actual or potential) as opposed to individual identified projects, is also in rather rudimentary state in Africa. Even in relation to assessing individual projects, much remains to be done to formulate

a framework and tools for an integrated evaluation of the various elements to be considered. This is particularly the case with making an evaluation of potential impacts on human health an effective part of the impact assessment system, as acknowledged by African ministers for health and the environment in the Libreville Declaration of 29 August 2008 (box 4.4).

Developing discharge and emission standards, mine closure obligations to be applied to mining and mineral processing in Africa and a cadre of professionals with the needed skills to conduct impact assessments still presents challenges. The financial and human resource constraints in most African countries limit the capacity of institutions tasked with enforcing these requirements.

Post-closure issues, often ignored in mine closure planning, especially at the pre-mine planning stage, are generally categorized as monitoring, maintenance and remediation. Monitoring and maintenance issues include long-term water quality sampling, geo-technical inspections of tailings dams and waste rock facilities, and repair regarding dams, the slopes of waste dumps and re-vegetation, especially where primary seedling or planting has failed. Mining plans should include plans for post-closure monitoring, maintenance and remediation of all mine facilities, including surface and underground mine workings, tailings and waste disposal facilities. And they should include a funding mechanism for all these elements.

Other challenges in impact assessment relate to the adequacy of compensation packages for disrupting livelihoods and destroying property in the case of resettlement. As noted in Akabzaa (2009), unmet expectations for compensation can be a permanent source of tension between mining communities and project developers.

**Box 4.4****Libreville Declaration on health and environment in Africa, 29 August 2008**

“Concerned that:

We, African ministers responsible for health and the environment, meeting from 28 to 29 August 2008 in Libreville, Gabon;

*Reaffirming* our commitment to implement all conventions and declarations that bear on health and environment linkages,

Concerned that:

Over 23 per cent of deaths in Africa, estimated at more than 2.4 million each year, are attributable to avoidable environmental risk factors, with particular impacts on the poorest and the most vulnerable groups (children, women, rural poor, people with disabilities, displaced populations and the elderly);

60 per cent of the vital ecosystem services of the planet are being degraded, or are being subjected to excessive pressures, and that it is these services that maintain the quality of air, land and water resources;

Recognizing that:

...

There are constraints on accelerated implementation of the necessary integrated strategies to protect populations against risks resulting from environmental degradation, including risk factors such as poor access to safe drinking water, poor sanitation and air quality, vector-borne diseases, chemicals, poor waste management, new toxic substances, desertification, industrial and household-related risks, and natural disasters;

The emergence of new environmental risks (climate change, industrial expansion, and new technologies) presents new threats to public health;

Africa is, of all the world's geographic regions, the most vulnerable in the face of these challenges;

Well-managed health and environmental risks impact positively on national economies...;

.....

Therefore declare that we, African countries, commit ourselves to:

establishing a health-and-environment strategic alliance, as the basis for plans of joint action (para. 1 of the Libreville Declaration);

Developing or updating our national, subregional and regional frameworks in order to address more effectively the issue of environmental impacts on health, through integration of these links in policies, strategies, regulations and national development plans (para 2 of the Libreville Declaration);

.....

Instituting the practice of systematic assessment of health and environment risks, in particular through the development of procedures to assess impacts on health and to produce national environment outlook reports” (para 9 of the Libreville Declaration).

## Public participation

Public participation, an important part of regulating the environmental and social impacts of mining projects, has potential to ensure that the overall management of exploiting mineral resources is sustainable. Two key benefits can arise from public participation in the decision as to whether a project with potentially significant environmental and social impacts should proceed. First, local knowledge of the impacts often provides valuable information potentially missed by outside experts. Second, it legitimizes a project, thus reducing the costs emanating from the social tensions that can result from an externally-imposed project.

But the decision-making process could be lengthy and result in added expenses if it involves extensive public consultation. And the opportunity exists for vocal groups to dominate the process and shape decisions in ways not sufficiently representative of the participating public.

That unfavourable publicity may occur has potential to prompt project sponsors or government officials to dilute the content and scope of the consultative process. An uneasy relationship between project developers and mining communities could emerge from this short-circuited process.

It is now standard for laws requiring environmental and social impact assessments to include a public participation component. Regulations in many African countries require that a project sponsor publish in local and official languages, through media accessible in the locale of the proposed project, an indication of where a copy of its environmental impact study may be inspected, as well as to whom and within what period representations about the project may be made. Some regulations, such as Uganda's, require that the developer "take all necessary measures to seek the views of the people in the communities, which may be affected by the project during the process of conducting the study", as well as after its completion. The developer must publicize the project and its anticipated effects and benefits for a prescribed period in the mass media and in a language understood by the affected communities. And the developer must hold meetings after that with those communities regarding the project at such

times and in such venues as are agreed with leaders of local government bodies. After the study's completion, the general public must again be invited to comment on the study through notices in prescribed form and the media. A designated official is empowered to decide whether a public hearing should be held on the study.

So, provisions need to be made for public involvement in the course of preparing of the EIA and SIA studies as well as for a further possibility at the stage when it is being reviewed by government agencies. The effectiveness of public participation provisions depends on the imagination and flexibility in choosing consultation and discussion mechanisms and techniques.

The more fully set out the criteria are for determining whether to hold a public hearing in the course of reviewing an environmental and social impact study, the better the outcome.

The right to a clean environment is imbedded in most African constitutions. In fact, certain provisions in the constitutions of various African countries not only impose obligations on state organizations with respect to the environment but also give citizens rights to enforce them. The right to a clean environment expressed in Uganda's Constitution, for instance, has been held to give standing to a non-governmental organization in an action against the government and its environmental authorities. Such provisions can found claims of a right in members of the public to be heard before decisions are made on projects that could have significant adverse impacts on them.

Lenders to mining projects increasingly require that project sponsors commit to and implement public participation processes. For example, World Bank Group safeguard policies relating to the environment, involuntary resettlement, indigenous people and information disclosure have a bearing on evaluating loan applications as well as on the covenants imposed on borrowers in loan agreements. Indeed, the strengthening of a borrower's capacity to meet environmental, public participation and social obligations required by these safeguard policies is now frequently a significant aspect of lending decisions.



The International Finance Corporation's (IFC) policies require that a Public Consultation and Disclosure Plan be submitted for a project with potentially significant environmental and social impacts. Such a plan must include an inventory of key stakeholders, methods to be used, a schedule of consultation activities and how they fit into the overall project schedule, a budget and an indication of staff and management resources to be devoted to its implementation. It must also include a review of previous consultation processes as well as criteria by which its effectiveness is to be assessed.

The fifth of the nine Equator Principles to which major commercial banks have subscribed requires that its adherents fund projects with potentially significant impacts only if "satisfied that the borrower or third party expert has consulted, in a structured and culturally appropriate way, with project affected groups, including indigenous peoples and local NGOs", that the assessment report "or a summary thereof, has been made available to the public for a reasonable minimum period in a local language and in a culturally-appropriate manner" and that the project environmental management plan "will take account of such consultations". Those "likely to have significant adverse impacts that are sensitive, diverse or unprecedented" (category A projects) must be subject to independent expert review.<sup>4</sup>

Due to various constraints and challenges, there is usually a mismatch between the expression of public participation rights in formal instruments and its implementation. Redressing the weight of existing power relations, especially for marginalized and vulnerable groups, addressing deep-seated authoritarian elements of local cultures and reducing the resource constraints (human and material) of public institutions and those affected by or actively concerned about projects with environmental implications are some of the major challenges faced in pursuing public participation. The Peruvian regulations incorporate mechanisms for financing public participation so that the mineral rights holder in coordination with the competent authority could propose the constitution of a private voluntary fund to facilitate the participation of people located in the direct area of the project's influence (see box 4.5). The fund could be complemented with other parties' contributions.

Valuable work has been done to assist in planning and implementing effective public participation processes. The IFC's manual, *Doing Better Business through Effective Public Consultation and Disclosure*, is a valuable example. It contains, among others, guidance notes for identifying consultation possibilities at different stages of a project, a checklist of objectives and actions for improving consultation and another checklist of "Techniques for Public Consultation and Information Disclosure".<sup>5</sup> They provide a range of tools from which a selection can be made for application to specific situations. The International Council for Mining and Metals has, in collaboration with the World Bank, sponsored studies that focus on making participation effective for mining projects. These studies seek to relate participation processes to the activities involved in different phases of a project, the standards required by law or other applicable norms; the broad strategic objectives of the sponsoring organizations, the characteristics of the participating stakeholders, the communication strategy judged to be appropriate and the resources available.

Developing procedures for public participation in policy formulation poses distinct challenges because project activities tend to have more localized impacts than policy activities. The affected public is thus likely to be much broader in the latter instance than in the former. Policy and plan formulation often involves more general and abstract statements of intention than project approval decision-making. Even for those directly responsible, the implications of the expressions they have agreed to in policy documents are not always obvious when measured against actions they wish to take in specific situations.

Initiating and adopting policies or plans are central responsibilities of the government. Strengthening procedures for public input into policy formulation, enhancing the role and quality of their chosen representatives in the government and finding appropriate roles for civil society organizations are critical to improving participation. Where the executive is very strong, the danger exists that participation processes can be little more than rituals that do not affect policy outcomes.<sup>6</sup>

One of the most elaborate efforts at meaningful engagement of the broad public occurred in the development of



**Box 4.5****Public participation in the mining industry: Peru's regime**

The principal legal instruments in Peru's regime are the Supreme Decree N° 028-2008-EM (May 2008): Regulation of the public participation process in the mining industry; and the Ministerial Resolution N° 304-2008-MEM/DM (June 2008): Specific rules of the public participation process in the mining industry. They set out broad principles such as the right of members of the public to participate; the right of access to information; the right of members of the public to monitor, verify and enforce the fulfilment of a project sponsor's obligations, but that the consultation/participation process does not give the local population a right of veto; that stakeholders ought to maintain constant communication in order to promote and maintain an adequate social relation ("relacionamiento social") and that one principal objective of the participation process is to end up with agreements between the project sponsors and the local indigenous peoples (including Peruvian peasant and native communities) to safeguard the rights and traditional customs of the people and to establish the benefits and compensatory measures to be accorded to them.

The precise methods for participation in each specific case are to be determined by a governmental authority following proposals by the project sponsor. The methods required for a project involving large-scale mining or mineral processing are more detailed than those for exploration or artisanal and small-scale mining. For large-scale mining and processing:

- There must be at least two participation workshops before the start and during the conduct of impact assessment studies;
- The study report must contain an executive summary describing in simple language the project's implications and impacts, among others;
- The project sponsor must distribute copies of the report and an executive summary to the different governmental and indigenous peoples' authorities. The report is to be advertised through press, radio and posters to allow interested parties to formulate observations or comments to be answered by the project sponsor;
- At least one public forum (audiencia pública) must be held with the participation of the mining, regional and local authorities;
- The authority may order that the public participation process is carried out in the language mainly used in the area or with translators;
- The project sponsor, in coordination with the authority, may constitute a trust to help the population review and formulate observations;
- The authority may also order that a trust be constituted to fund public participation in the monitoring and enforcement of the sponsor's obligations; and
- The costs of the process are to be borne by the sponsor.
- 

Consultative workshops must precede the completion of impact studies for exploration. Upon completion, it must be advertised through the webpage of the designated authority, press and radio. Members of the public can formulate comments or questions to be answered by the sponsor. For artisanal and small-scale mining, public participation is carried out through publishing the environmental instrument on the webpage of the corresponding regional government, to be reviewed and commented upon by any interested party.

*Summarized by Gebriel Bailetti, 2008*

South Africa's post-apartheid mineral policy. The process was entirely consultative from the identification of issues (from global and domestic sources) and engagement of stakeholders, the processes of consultation (public meetings, workshops, parliamentary hearings, publication of drafts for comments) and the efforts at exploring areas of consensus while acknowledging areas of divergence.<sup>7</sup> Despite the astronomical costs of such processes in the short

to medium term, the benefits of consultation far outweigh these costs. A stable and predictable policy environment is created, crucial for mining projects with long lives. The experience from Canada's Roundtable process for formulating a corporate social responsibility framework for its extractive companies operating abroad shows the elaborate nature of the consultative process (appendix J).

## Access to information

The relationship between access to information and participation in decision-making is expressed in Principle 10 of the Rio Declaration, which states that "each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available". It is also expressed 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), widely regarded as a model of a public participation regime.<sup>8</sup>

South Africa's legislative framework exemplifies an incipient trend in Africa of enacting freedom of information legislation with potential to pressure a bureaucratic culture of secrecy regarding even the most routine matters. Its constitution guarantees the right of every person to receive or impart information or ideas—and to have access to information held by the state as well as to "any information that is required for the exercise or protection of any rights". Given the formulation of the right to

a healthy environment, the right of access would cover information in private hands required for its exercise or protection. These rights are expressed to be subject to such limitation as may be provided in laws "of general application to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom taking into account all relevant factors".

Further to these provisions in the South Africans' case, the Promotion of Access to Information Act (2000) and its regulations establish a scheme to facilitate access to information held by public and private institutions. The scheme involves mechanisms for publicizing the categories of material held by different institutions, obligations to designate officials to handle access obligations, procedures for obtaining access to information protected from disclosure, time limits for disclosure, a prescription of the grounds justifying non-disclosure and avenues for redress in the decisions of the responsible officials and the institutions. The South African Human Rights Commission is assigned responsibility for monitoring and enhancing the implementation of the Act. Most African countries are still at the development stages in the legislative framework for access to information.

## Addressing the minerals and conflicts link

As discussed earlier, conflicts may arise from distributing mining revenues and lack of direct participation of communities in mining projects. Compensation for land and other rights can also be a source of long-term tension. Many legal systems provide that no one should be deprived of an interest in land or other property without arrangements for the prompt and effective payment of compensation. The challenge often is to protect the relatively vulnerable or not so powerful sections of society. With regard to resettlement, the IFC Performance Standards set out important objectives that offer criteria for developing and implementing plans:

- To avoid or at least minimize involuntary resettlement wherever feasible by exploring alternative project designs;
- To mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons' use of land by compensating for loss of assets at replacement cost and ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected;
- To improve or at least restore the livelihoods and standards of living of displaced persons; and
- To improve living conditions among displaced persons through provision of adequate housing with security of tenure at resettlement sites.

The IFC Performance Standard 5: Land Acquisition & Involuntary Resettlement provides a detailed discussion of these issues and outlines a framework.

Addressing conflict minerals situations such as those in the Democratic Republic of the Congo has involved initiatives that focus on strengthening governance capacity, transparency, certification processes, security reform and regulation of multi-national companies. Numerous international instruments and initiatives already exist including UN Security Council Resolutions 1856 and 1857 (2008), the United Nations Organization Mission

in the Democratic Republic of the Congo activities and the International Conference on the Great Lakes Region "Regional Initiative against the Illegal Exploitation of Natural Resources".

The Kimberley Process Certification Scheme (KPCS) is an example of a system established to track the production and marketing of diamonds in order to disrupt trade of those coming out of conflict zones. Trade in illicit diamonds has fuelled decades of devastating conflicts in several African countries. The KPCS, launched in 2002, is a joint control initiative by governments, industries and civil society to ensure that conflict and stolen diamonds do not enter the legitimate diamond value chain. The main KPCS monitoring tool is reviewing expert missions to participant countries, especially problematic ones. The KPCS imposes extensive requirements on its members to enable them to certify shipments of rough diamonds as "conflict free". The KPCS is backed by various UN General Assembly resolutions, which provide participant states with the legal basis for trade restrictions that can be challenged based on World Trade Organization rules. This raises the question whether a certification scheme should be backed by UN resolutions to increase its international legitimacy.

Inspired by the KPCS, the International Conference on the Great Lakes Region has adopted the "Protocol on the Fight against the Illegal Exploitation of Natural Resources". The protocol legally binds 11 member States to jointly tackle the illegal exploitation of natural resources through a tracking and certification system, which applies subregionally. And the system has borrowed heavily from the KPCS. Among the important borrowed principles is that a certification system must address problems of governance, development and ethical mining practices, prevent mineral commodities from non-certified mining areas entering controlled production streams, include independent third party audits and provide credible sanctions for non-compliance. In effect, the tracking system consists of discreet national tracking systems with national data submitted to a regional database. This African-led initiative has been endorsed internationally—for example, by the G8 Summit in 2009. The International Conference

on the Great Lakes Region tracking system is probably a model that needs to be explored for adaptation in other

African regions. (More information on the system is given in chapter 6.)

## Mining and human rights

The exploitation of minerals has been associated with the violation of human rights, and it is one of the most prominent issues raised by mining-affected communities and civil society organizations working on mining issues. Indeed, most of the social impacts of mining are covered by human rights. Alleged human rights abuses within the extractive industry include the disappearance of people, violation of the right to a clean environment, arbitrary detention and torture, loss of land and livelihoods without negotiation and without adequate compensation, forced resettlement, the destruction of ritually or culturally significant sites without compensation or compensation and labour rights violations.

There have also been issues for the rights of indigenous people. An example is the Chad-Cameroon pipeline project and the Bagyeli people. These communities depend on the forest and its products for their subsistence. Less than 5 per cent of the affected Bagyeli are employed in the pipeline project, but the project's impact on their social welfare has been considerable. Increased logging, the loss of water resources, noise and river pollution have damaged their hunting and fishing areas, while the destruction of surrounding forest and medicinal plants have caused cultural and health problems. In most parts of Africa the protection of indigenous rights has raised challenges, mainly because some African countries, for example Botswana, do not officially recognize any groups of people as being indigenous vis-à-vis the rest of the citizenry, despite historical evidence that the San groups of Botswana are in fact indigenous to that country.

A review of corporate human rights abuses presented by John Ruggie, the Special Representative of the UN Secretary-General (SRSG) on human rights and transnational corporations and other business enterprises, in 2006 showed that of the 65 cases worldwide covering 27 countries, the oil, gas and mining sector accounted for two-thirds of the abuse cases.

Mining and petroleum development usually occur in fairly under-developed areas with agrarian or pastoral populations. The large “footprint” of a mine can be extremely impactful, both positively and negatively. The SRSG has noted that “there is clearly a negative symbiosis between the worst corporate human rights related abuses and host countries that are characterized by a combination of relatively low national income, current or recent conflict exposure, and weak or corrupt governance”. In this light, it is not surprising that human rights protection has become important for the law and international frameworks seeking to regulate the conduct of business by mining companies.

Mining countries need to protect their citizens against human rights abuses and many African national constitutions contain extensive provisions on human rights that are binding on all natural and legal persons operating within their jurisdiction. South Africa's constitution ties environmental rights to human rights, extending to protection against unacceptable behaviour by business entities. The human rights provisions in Ghana's constitution explicitly include the right of workers to form and join unions and do not merely leave that to be deduced from the right to free expression or association. The African Charter on Human Rights, ratified by 53 member countries, also sets out a framework of binding norms, relevant for human rights protection in the mining sector. Article 21.1 states that the right of people to freely dispose of their wealth and natural resources shall be exercised in the exclusive interest of people, and in no cases should they be deprived of it. Furthermore, the Charter makes provisions regarding the spoliation of wealth and natural resources and advocates for the right to adequate compensation.

Respect for human rights by companies is an important part of their social licence to operate, but the scope of the obligations imposed on them by international human rights law is limited and contentious, even as it is widely

recognized that with the growth of global power and reach of corporations, domestic regulation is inadequate to protect human rights from corporate infractions. The development and adoption of the UN *Protect, Respect and Remedy Framework* in 2008 seeks to provide principles to guide states and businesses in protecting and respecting human rights. Developed by the SRSG, after extensive consultation with a broad range of stakeholder groups, the UN Framework establishes three pillars: the state's duty to protect against human rights abuses by third parties, the corporate responsibility to respect human rights and greater access by victims of human rights abuses to effective judicial and non-judicial remedies. According to Ruggie (2010), the Framework is intended to work dynamically and no one pillar can carry the burden of resolving the governance gaps that exist. While it is a general framework that can be applied to any type of business, it seems to be particularly germane to the extractive industries' sectors considering the statistics cited above on human rights abuses in the sector.

The UN Framework invites governments to see the protection of human rights against abuses by business entities as a comprehensive responsibility going beyond environmental impact assessment, approval and monitoring projects. The Framework proposes a number of ways that states can reinforce legal obligations aimed at strengthening protection of human rights on businesses, such as fostering a culture of respect for human rights among public institutions as well as businesses. For the latter, measures could include reporting requirements on companies—for example, in the Companies Code—to show how they are operationalizing their respect for human rights. Many times incoherence in the policies and practices of the state and its institutions has undermined the protection of and respect for human rights. The most dramatic instances of policy incoherence and lack of coordination have been in the negative impact of state action to increase foreign trade or to attract investment, such as signing investment or trade treaties and investment contracts with stabilization clauses—on its ability to fulfil its duty to protect human rights.

An investor dispute between El Salvador and a foreign mining firm illustrates the potential constraining impact of trade agreements on the state's ability to fulfil its duty

to protect human rights. Basing itself on the Dominican Republic-Central America Free Trade Agreement, Pac Rim Cayman LLC, a US subsidiary of a Canadian mining company, sued the government of El Salvador for imposing a moratorium on mining permits, which affected its gold mine project. El Salvador in 2009 has the highest population density in the Americas and is also grappling with a serious water shortage.<sup>9</sup>

A study by the IFC and the SRSG has established that certain types of stabilization clauses in contracts between investors and host states could constrain the state's ability to protect human rights. The study concluded that developing countries were more likely to "include social and environmental laws—even laws of general application on issues such as minimum wage, labour, health, safety, and the like—in a stabilization clause."<sup>10</sup> From a geographic perspective, agreements from sub-Saharan Africa contained the highest percentage of the most constraining clauses. And the study found that extractive sector agreements contained the most constraining clauses. There are debates about the legality and enforceability of freezing clauses but their presence in contracts gives beneficiary companies the leverage to pressure governments to at least limit the application of new laws. Their potentially constraining effects on the state for human rights protection underline the need to incorporate the management of human rights into the contracting processes between states and investors. Fostering a culture of respect for human rights in public institutions could aid improvements in policy coherence for human rights protection.

In May 2011 the 17th Session of the UN Human Rights Council considered a proposal from the SRSG for 10 principles for integrating human rights risks into state-investor contract negotiations.<sup>11</sup> The principles cover such issues as ensuring that stabilization clauses do not compromise protection of and respect for human rights, planning adequately for addressing human rights implications of projects during negotiations protection, engaging the community effectively and creating grievance mechanisms for non-contractual harms to third parties and transparency of contract terms. Together, the terms cover the three pillars of the UN Framework and crucially reduce the possibilities for incoherence in the policies and actions of the state. The SRSG's study of stabilization clauses



offers examples of cases where investment contracts were re-negotiated to remove constraints on the human rights responsibilities of both states and companies.

Mining firms are quick to proclaim their respect for human rights. Compliance with the laws of a country is an obvious way for a business to show its respect for human rights. In many situations in Africa where enforcement institutions and the culture of human rights protection are weak the institutional commitment of powerful mining firms to respect human rights is crucial. The UN Framework offers many ways through which firms can fulfil their responsibilities to respect human rights. They include identifying and responding to the particular human rights challenges that they face in their specific context, upholding core international human rights and International Labour Organization (ILO) conventions and monitoring their performance for human rights compliance. They

also offer criteria by which to evaluate how mining firms respect human rights.

Victims of human rights abuses in African countries, not only those attributed to mining firms, face many obstacles in obtaining remedies. In general most citizens do not find judicial bodies accessible for various reasons, such as costs, physical distance, long delays due to heavy workloads and tortuous procedures. Non-judicial processes such as human rights institutions and alternative dispute resolution mechanisms offer better prospects for speedy remedies for victims of abuses. In Ghana the Commission for Human Rights and Administrative Justice, a constitutional body, has a history of dealing with cases of allegations of rights violations in mining areas. Following years of dealing with individual cases, it carried out a comprehensive nationwide investigation into rights abuses in Ghana's mining areas over 2006–2007.

## Mining and employment

Large-scale mining played a pioneering role in creating the industrial labour force in mineral exporting African countries such as Ghana, South Africa, and Zambia. And it was an important employment sector in many countries until the sector suffered decline as part of the economic reforms of the 1980s. The current phase of Africa's mining industry has involved the restructuring of employment and labour regimes away from “the cradle to grave” security that most mine workers enjoyed in the state-owned mining firms most of which have since been privatized. Across Africa the reforms enabling the creation of the current mining regimes involved the laying off of tens of thousands of mining workers as loss-making state-owned mining firms were dismantled or unbundled and sold off to foreign investors. For example, nearly 40,000 workers lost their jobs as the parastatal Zambian Consolidated Copper Mines was broken up and privatized.<sup>12</sup>

The upsurge in mining since the liberalization of the sector and resulting substantial inflow of foreign direct investment has created new direct and supporting jobs in old as well as new mining African countries. In many cases the mining firms offer valuable skills training for employees, and the jobs are well paid relative to wages in

the wider national economy. According to an International Council for Mining and Metals study (2008), Tanzania's large-scale mining sector had created about 8,000 direct jobs and 45,000 additional ones. In 2009 large-scale mining directly employed more than 17,000 people in Ghana. A study of the socio-economic impact of Newmont Ghana Gold Ltd., directly employing less than 1,800 workers, has claimed that its operations have created more than 46,000 additional jobs through its suppliers and wider economic effect.<sup>13</sup> In Africa's mineral dependent economies the most significant job losses occasioned by the global financial and economic crisis of 2008 were experienced in the mining sector with the Southern African Development Community region being the worst hit.<sup>14</sup>

But the job-creating impact of the new mines has been limited because capital-intensive “large-scale mineral extraction generally offers limited employment opportunities”.<sup>15</sup> According to the United Nations Economic Commission for Africa, data from foreign affiliates of US firms in Africa show that manufacturing foreign investment is 17.5 times more labour-intensive than mining foreign investment.<sup>16</sup> This comparison tempers the significance of the Newmont and International Council

for Mining and Metals studies, about the indirect employment—creating impact of mining in Ghana and the United Republic of Tanzania, respectively—even as they draw attention to the need to consider the jobs created by the local linkages and socio-economic impact of mining operations for a fuller picture of the employment effects. But other studies show that in some cases conclusions about the job creating value of new large-scale mines have to consider the rural jobs and livelihoods—such as those of farmers, artisanal miners and other rural economic actors—destroyed or severely disrupted by the establishment of the large mine and whose value in rural economy cannot be replaced by the highly-mechanized mine.<sup>17</sup>

The jobs and employment relations created by the large-scale mining sector have been constructed in the context of the labour market deregulation and growth of “flexible employment”, key aspects of global economic liberalization. Employing casual and contract labour is a pervasive practice in the global large-scale mining industry.<sup>18</sup> South Africa, the continent's largest mining economy, has seen the progressive expansion of casualization and contract labour since the early 1990s when the gold mines, faced with stagnating gold price, declining reserves and escalating costs, looked for ways of reducing their sizeable labour costs.<sup>19</sup> By 2005, according to the South African Department of Minerals and Energy, contract workers made up 28 per cent of the total South African mining labour force. Casualization has been described as one of the “salient results” of privatization on the Zambian Copperbelt with traditional “permanent” positions reportedly accounting for only half of all mining jobs in the five major copper mining companies in 2008. In 2006 nearly half of the workforce at AngloGold Ashanti's Geita mine in the United Republic of Tanzania was made up of casual employees with only 3 per cent of the permanent labour force unionized.

According to the Business Council of Australia, greater employment flexibility in the Australian mining industry has “delivered significant benefits”, and “[it] has supported innovation; greater accountability for performance; high levels of productivity as well as sustained, strong productivity growth; high levels of wages; and outstanding returns to shareholders”.<sup>20</sup> For mining unions, however, “nothing is more likely to undermine the ILO's ‘Decent

Work’ philosophy than the expanding use of contract labour” because “almost universally, contractors—and their subcontractors—get away with providing few benefits such as pensions, medical insurance, death or injury benefits, sick pay, paid leave, maternity benefits, etc.”<sup>21</sup>

Studies of mining employment in a number of African countries corroborate the International Federation of Chemical, Energy, Mine and General Workers' Unions (ICEM) view.<sup>22</sup>

From its pioneering days in the colonial period, Africa's mining industry provoked concerns about working conditions—use of forced labour, denial of trade union and collective bargaining rights—as well as breaches of health and safety standards. In most mineral rich countries, mining remains a hazardous occupation in terms of the number of people exposed to risk, death, injury and disease. Workers' health and safety are among the major concerns in the extractive industries. The occupational safety and health implications vary significantly between different mining activities and countries. In the working environment of a surface mine, for example, airborne contaminants such as rock dust and fumes, excessive noise, vibration and heat stress can create health problems for miner workers, who are subjected to frequent and prolonged exposure to them.

The ILO has been dealing with labour and social problems of mining since its early days. ILO efforts include adopting the Hours of Work (Coal Mines) Convention (No. 31) in 1931 and the Safety and Health in Mines Convention (No. 176) in 1995. For more than 50 years, tripartite meetings on mining have addressed a range of issues from employment, working conditions and training to occupational safety and health and to industrial relations in coal and non-coal mining. As a result more than 140 conclusions and resolutions have been agreed on, including the Mining Convention. Some of these agreements and resolutions have been implemented nationally, while the ILO has assisted others, such as with training programmes and the development of codes of safety practice. The ILO's objectives are to ensure decent and safe work for all mine workers and that the industry contributes to sustainable development. According to the ILO, “Decent work involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection



for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men”.<sup>23</sup>

It is the responsibility of mining companies to observe the requirements of local labour laws and practices. They should also adhere to fundamental labour standards as set out in ILO Conventions and re-emphasized by the ILO Declaration on Fundamental Principles and Rights at Work of 1998. The ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy calls on transnational corporations to respect, promote and uphold the principles concerning fundamental rights, irrespective of whether a country has ratified or implemented the ILO Declaration on Fundamental Principles and Rights at Work.

It has been noted that the most common obstacle to implementing international standards and norms is a lack of domestic capacity in some countries as well as states being excessively cautious about potential conflict with large foreign mining companies over their labour practices. Trade unions see a recourse to their global might as one way of supporting efforts by local and national unions

to secure the best working conditions for workers. The ICEM, like other global trade union organizations, has adopted the approach of signing global framework agreements with transnational firms on the “promotion and implementation of good human and industrial relations” as one element of this international support.

In 2009 ICEM and AngloGold Ashanti signed a global framework agreement, committing both parties to a set of principles and values, including respect for human rights and fundamental freedoms, right of free association and elimination of forced and compulsory labour. The agreement applies to all operations over which AngloGold Ashanti has “direct managerial control”. And in the case of subsidiaries or where it does not have direct control, “it will exercise its best effort to secure compliance with the standards and principles” in the agreement. It does not override national legislation, principles or terms of local collective bargaining agreements, meaning that in cases where the national industrial relations climate and culture constrain workers’ rights this could be a limitation. But a global commitment to good industrial relations practice and respect for human rights puts the onus on AngloGold Ashanti or any transnational corporation to respect the spirit of the agreement in all circumstances.

## Resource productivity

The increasing scarcity of minerals that are relatively easy to extract, the recent period of high mineral prices, and the need to prudently manage the environment have prompted a high-level interest in the analysis of global mineral resource flows. There are initiatives targeted at addressing resource efficiency globally, regionally and nationally, and in both the public and private sectors. This has been discussed at G8 Summits for the past five years. Adopting recommendations, by the Organization for Economic Cooperation and Development (OECD) Council, on resource productivity in 2004 and 2008 demonstrates the importance attached to this issue. The OECD has also published a policymaker’s guide on measuring material flows and resource productivity. Similarly, the European Union adopted thematic strategies on the sustainable use of natural resources as well as on waste prevention and

recycling in 2005. Most OECD countries have launched initiatives to promote waste prevention, sustainable materials management, integrated product policies and the “3R” (reduce, reuse and recycle) Initiative. China has recently adopted a law on the “circular economy”.<sup>24</sup>

The Wuppertal Institute has proposed measures to improve resource productivity in the global value chain for ore extraction locations, at policy and industry levels.<sup>25</sup> At policy level, governments could:

- Link initiatives on social issues in extraction to operational and resource efficiency improvements;

- Promote the exchange of knowledge, technologies and best experience on how to increase resource productivity in the extraction phase; and
- Set up internationally-harmonized labelling and information systems on the (embodied) resource consumption of raw materials and commodities.
- 240. At the operational level, industry could:
- Introduce resource efficiency standards in the global extraction activity to capitalize on cost savings through resource efficiency;
- Raise resource productivity in partnerships with actors in artisanal or small-scale mining; and
- Engage in partnerships with raw material suppliers to enhance resource productivity standards.

In 2007 the United Nations Environment Programme set up an International Panel on Sustainable Resource Management. Its work is framed around issues of resource efficiency and sustainable consumption and production. The premise of sustainable consumption and production is that there is (or may be) a critical minimum stock of “natural capital” required for providing ecosystem services, and that it is essential to incorporate its protection into production and consumption decisions and regulations. The objectives of the resource panel are expressed as being to “provide independent, coherent and authoritative scientific assessments of policy relevance on the sustainable use of natural resources and in particular their environmental

impacts over the full life cycle” and “contribute to a better understanding of how to decouple economic growth from environmental degradation”. It situates its work in relation to other initiatives such as the Marrakech process, the 3R Initiative, the circular economy approach, the Global Environment Outlook and the Millennium Ecosystem Assessment. The metals and minerals sector is one of the areas in which it is concentrating its work. Its Global Metal Flows Working Group has published in 2010 its first of six reports focusing on metals, which will address the recycling of metals, environmental impact of metals, information available on the virgin reserves and resources of metals, future demand scenarios for metals and critical metals and metal policy options, among others.<sup>26</sup>

ISO 2600 Standard on Social Responsibility, launched by the International Organization for Standardization in Geneva in 2010, provides guidance on social responsibility, which could be useful in advancing the Africa Mining Vision and helping countries strengthen their frameworks on social responsibility and the environment.

Since transnational corporations are major players in Africa, their home countries (OECD or newly industrialized countries) and their shareholders ought to have some influence on their social responsibility, especially where they are operating in African countries with weaker governance systems and where countries lack negotiation capacities. It is imperative for African governments, the private sector and civil society to continue creating and facilitating an open dialogue with the governments and actors from the home countries of the transnational companies.

## Policy implications

For mining to induce sustainable social and economic benefits to communities, the benefits have to be deliberately considered and pursued. As social risks are ultimately borne by communities and by workers, the implementation of mining practices, rooted in human rights and basic core labour standards, must take place with the full participation of all affected parties.

Environmental, economic, social, labour and developmental rights inherently require that democratic governance processes, institutions and systems are in place. Stable democratic institutions can help prevent central/local disputes from becoming violent, while new democracies are often unstable and face high risks of conflict. To avoid violent conflict in the extractive regions, governments,

firms, and local communities should promote transparency, establish multi-stakeholder dialogues before project commencement and take special care to protect human rights and security.

Addressing the adverse environmental and social impacts of mining requires a multi-pronged approach, which can include designating protected areas, enforcing impact assessment requirements for all projects, enforcing regulatory standards, enforcing public consultation and public participation, before project implementation and enhancing transparent access to information. There are numerous international instruments and templates that address these key developmental changes and even at the local level, legislation exists in most countries.

The UN Protect, Respect and Remedy Framework offers a useful and comprehensive set of principles which can be applied to the duties of states and the responsibilities of mining firms in respect of a large range of the impacts covered by the chapter. In addition to its use, however, African states need to strengthen their legislative frameworks and the capacity of enforcement institutions.

Minerals have been sources of conflict in some countries on the continent, and mechanisms to address these conflicts have included strengthening governance capacity, transparency in revenue collection and sharing, transparency in the allocation of mining licences, certification processes for minerals, security reform and regulation of multi-national companies. The strategic implementation of these initiatives tailored to specific regional contexts would be required. Despite often causing conflicts over mineral resources, mineral exploitation presents opportunities to facilitate peace and regional security and enhance regional integration through corridor development.

The African mineral policy architecture has to be holistic and consider the benefits (revenues, taxes, export earnings, jobs and so on) and costs (environmental and social costs). A creative approach is required in tackling environmental and social challenges to entrench the sector's developmental role. The framework has to be supported by adequate institutional, human and legal capacity.

## Endnotes

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- 26 The International Resource Panel has recently (2011) published a report titled "Decoupling natural resource use & environmental impacts from economic growth". ([http://www.unep.org/resourcepanel/decoupling/files/pdf/Decoupling\\_Report\\_English.pdf](http://www.unep.org/resourcepanel/decoupling/files/pdf/Decoupling_Report_English.pdf))

# Artisanal and Small-Scale Mining in Africa

# 5

## CHAPTER

*“Harnessing the potential of ASM to improve rural livelihoods, to stimulate entrepreneurship in a socially-responsible manner, to promote local and integrated national development as well as regional cooperation”*  
— *The Africa Mining Vision*

**ARTISANAL AND SMALL-SCALE** mining (ASM) is widespread in Africa and goes beyond the borders of countries endowed with high-value minerals. ASM miners also mine and process industrial minerals, such as lime for agriculture.

Few would dispute that ASM makes a positive contribution to African economies and, more particularly, to sustaining rural livelihoods. Yet it faces many challenges that prevent it from attaining its full potential as a potent force in socio-economic development. This chapter outlines policy responses to address the challenges of ASM in light of the AMV.

## Definition

There is no consensus on what constitutes a small-scale mining operation; neither is the boundary between ASM operations clearly defined. This is partly because definitions vary by country. Analysts use a combination of criteria to arrive at a working definition of ASM. In production terms, the United Nations places an “upper boundary” on ASM of 50,000 tons a year for underground mines and 100,000 tons a year for open-pit mines.<sup>1</sup> Most small-scale mining operations have a limit on project finance of \$5 million, while such operations are not expected to have more than 50 workers. These parameters are much lower

for artisanal operations, which are more labour intensive and employ hand tools and very basic processing techniques. These artisanal methods are wasteful and result in poor mineral recovery. The mechanized form of ASM has higher throughput and better recovery, but in turn is more labour intensive than medium to large-scale operations.

Despite differences in definition, common attributes stand out: most miners are seriously under-capitalized, rarely operate as proper business enterprises and lack appropriate and modern technology.

## The global position

ASM is integral to the economies of many mining countries in the developing world. The commodities exploited are diverse, encompassing precious and semi-precious minerals, base metals, industrial minerals and construction materials. Yet the informal nature of many ASM operations often makes it difficult to estimate total global production from the sector or the sector's contribution to national economies and mineral output. Most analysis relies on anecdotal evidence.

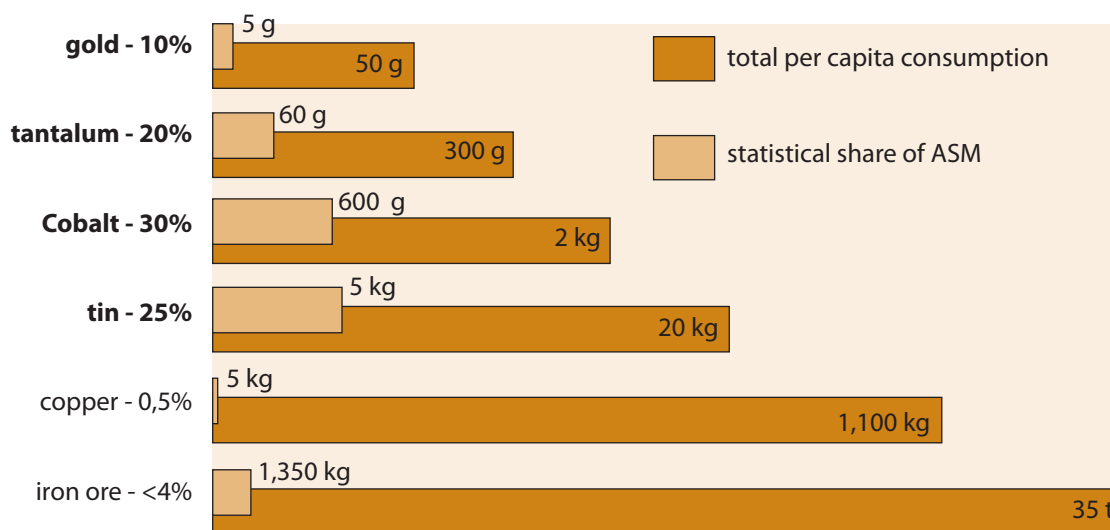
Yet analysts are unanimous that millions of people derive their livelihood from ASM. An estimated 13–20 million men and women in more than 50 countries worldwide are involved.<sup>2</sup> Around half are women.<sup>3</sup> Sadly, about 2 million

children are also known to be involved. More than 100 million people therefore depend on ASM for their livelihood. It is also the main means of livelihood for some rural communities.

Further, despite the lack of reliable statistics, analysts agree that ASM is a significant contributor to both global production and consumption of some mineral products. Global production of gold from ASM sources is estimated to be as high as 330 tonnes a year (figure 5.1).<sup>4</sup> ASM contributes more in high-value minerals, such as gold, diamonds and tantalum, than in bulk minerals like iron ore and copper. ASM operators are also involved in winning sand and gravel.

**Figure 5.1**

ASM share in Western mineral consumption



Source: cited from ICGLR, 2009.

## Profile in Africa

ASM activities are widespread in Africa, employing a large number of people directly in mining and associated services, as well as supporting large numbers of dependants (table 5.1). The large numbers of miners are partly attributable to high unemployment in many countries

and the sector's low barriers to entry, especially artisanal extraction. This sub-sector is characterized by very low start-up capital, low levels of skills, limited infrastructure and ease of entry and exit, contributing to fluctuating numbers.

**Table 5.1****African countries with more than 100,000 ASM operators**

Country	ASM	Estimated dependants
Angola	150,000	900,000
Burkina Faso	200,000	1,000,000
Central African Republic	400,000	2,400,000
Chad	100,000	600,000
Côte d'Ivoire	100,000	600,000
Democratic Republic of the Congo	200,000	1,200,000
Eritrea	400,000	2,400,000
Ethiopia	500,000	3,000,000
Ghana	1,100,000	4,400,000
Guinea	300,000	1,500,000
Liberia	100,000	600,000
Madagascar	500,000	2,500,000
Mali	400,000	2,400,000
Mozambique	100,000	1,200,000
Niger	450,000	2,700,000
Nigeria	500,000	2,500,000
Sierra Leone	300,000	1,800,000
Sudan	200,000	1,200,000
Tanzania	1,500,000	9,000,000
Uganda	150,000	900,000
Zimbabwe	500,000	3,000,000

Sources: Estimates based on CASM, ASM statistics for Africa.

Owing to its high labour intensity, ASM is commonly acknowledged to create far more jobs per invested dollar than large-scale mining (LSM). The profile of jobs, however, is largely that of poorly remunerated unskilled labourers who have gone into mining to avoid poverty. The working environment generally has poor conditions. Employment in the sector is highly cyclical, especially reflecting harsh economic conditions, such as those induced by drought and economic restructuring. During periods of stable economic activity in other sectors, the pull of ASM falls and the sector contracts.

Many workers sell their minerals at lower than market prices to middlemen, some of whom sponsor their operations. The incomes of such miners are usually below the poverty line, further reinforcing their poverty cycle.

ASM operators are generally migratory. They move from site to site searching for easy to extract mineralizations and

abandon sites once they find the ore difficult to extract. A combination of practical, economic and social factors accounts for this migratory behaviour, such as the life of the mine, the lure of high-value mineral strikes in other areas, displacement from mining areas (perhaps after their allocation to LSM companies) and the need to follow agricultural seasons. Since artisanal miners' capital investment is low, the opportunity cost of moving is not a deterrent.

As in other regions, ASM exploits many minerals in Africa, ranging from diamonds and a variety of other gemstones, to precious metals such as gold and tantalite, to industrial minerals including limestone for aggregate and agricultural purposes, clays for pottery and other uses and many other non-metallic minerals. ASM thus not only contributes to national and continental economic activity: as part of overall development programmes, it can be an important opportunity for improving conditions



in rural and remote areas, especially where alternative livelihoods are few.

## Challenges in Africa

The multitude of challenges faced by ASM in Africa is well documented in the literature.<sup>5</sup> They include inadequate policy and regulatory frameworks; limited technical capacity and access to appropriate technology (and consequent environmental degradation); lack of finance; inadequate access to exploration and mining areas; difficulties

in accessing the market; issues associated with conflict minerals; and women and child labour concerns. The opportunity for ASM to be transformed into a tool for sustainable development, particularly in rural areas, can thus be realized only if these challenges are met holistically.

### Policy challenges

The absence of specific policy frameworks facilitating the emergence or growth of sustainable ASM operations is a major constraint in most African countries. In some countries, small-scale mining policy and regulations fall under general mining policy, which makes no distinction between LSM and ASM. Thus the peculiar challenges in small-scale mining do not receive the attention that they deserve. Even in countries with a separate small-scale mining policy, the procedures for acquiring licences are generally cumbersome, which becomes a barrier to formalization. Without specific frameworks, ASM operators face challenges in getting mining rights.

Even when operators have formal access, the mining rights rarely provide for security of tenure: their duration is short and the size of the licence area usually small. Several licence areas may lie across a single ore body, leading to conflict. When they lack security of tenure, ASM operators cannot use their mineral rights as collateral for borrowing. The permitted levels of mechanization associated

with these rights are limited either by law or by limited resources available to the sector, and this can prevent ASM operations from developing beyond subsistence horizons.

The lack of appropriate institutional, financial and technical support mechanisms curtails ASM's sustainability. The ASM policy and regulatory environment in most African countries is seldom adequately supportive in vital areas such as access to appropriate financing mechanisms, provision of geological information and services, technical and marketing support or facilities for upgrading miners' skill levels. Even when there is such state support, its physical location may present problems for the mining communities.

The private sector could potentially provide some form of support with proper incentives, but LSM and ASM often have an acrimonious relationship. Trespassing by ASM operators on concessions and the eviction of informal indigenous miners by LSM companies lead to confrontation.

### Technical capacity and access to appropriate technology

The technical challenges facing ASM operators often stem from their low education levels. They also usually lack knowledge of the legislative requirements on occupational health and safety, the environment, mineral rights and a decent work environment. In addition, they have virtually no knowledge of marketing, business development or mine planning, which are critical skills for sustainable

business operations. Further, they generally lack access to appropriate and affordable technology. This is due to the prohibitive cost of plant and machinery, the overall lack of suitable small-processing technologies, the lack of local capacities to adapt traditional mining and mineral processing technologies to small operations and the weak capacity of ASM operators and communities to assimilate



available technologies. All these deficiencies force miners to target easy-to-find ore, but as they immediately abandon prospects as soon as the easy ore is mined out, they sterilize important resources.

Poor mining methods are associated with poor safety, health and environmental practices. In small-scale underground mining, weak rock formations may be poorly supported, leading to frequent cave-ins and injuries or

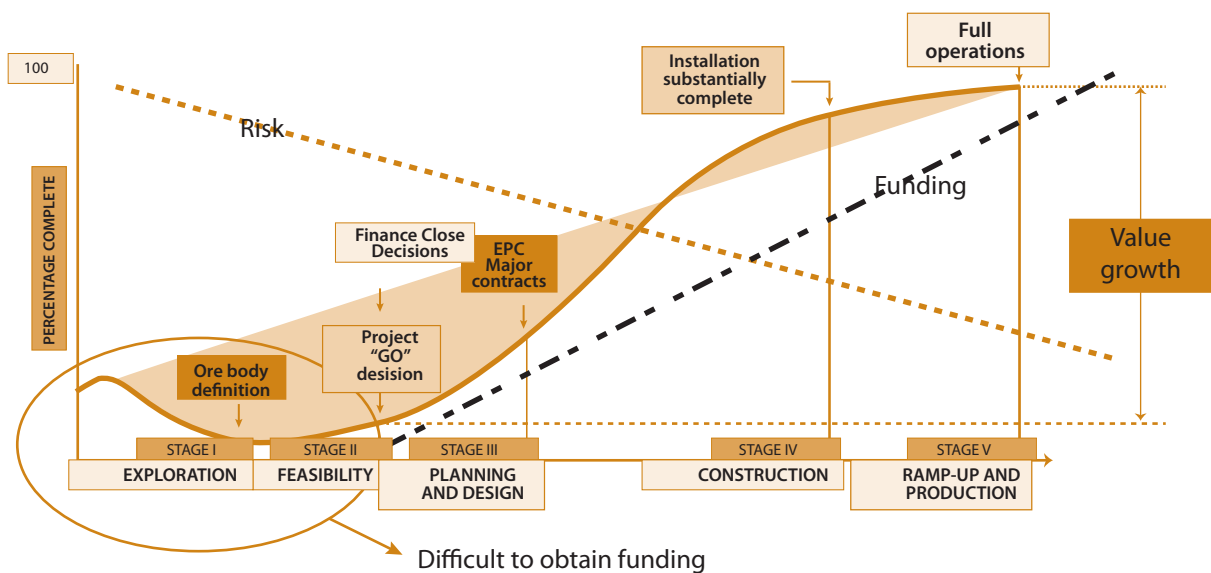
loss of life. Unplanned excavations are not rehabilitated and waste is indiscriminately disposed of, leading to water pollution and land devastation. Disposed mercury from gold-mining operations is particularly pernicious—and all the more unfortunate because the high level of mercury is unnecessary, as miners can use equally efficient extraction methods.

## Lack of financing

Access to finance is one of the biggest challenges facing many ASM operators. Among the many reasons is that mining is a capital-intensive business and much of the high-risk early-phase work, such as exploration and ore

reserve estimation, is typically financed from equity. This phase does not attract other forms of finance, including that from mainstream financial institutions (figure 5.2).

**Figure 5.2**  
Mine project development stages



Source: UNECA 2009b

The above financial constraints mean that most ASM operators cannot become involved in this early phase and consequently, without quantified ore reserves, they cannot develop the robust and credible business plans that banks require. (They rarely have the ability to develop such business plans anyway.)

ASM operators have few, if any, assets acceptable to banks and other lending institutions as collateral. Unlike their LSM counterparts, they cannot use their mineral rights (even where they exist) since the reserves are not quantifiable and their lack of a business plan forestalls risk analysis by creditors. The migratory nature of many ASM operators also makes access to such finance problematic.

These factors place ASM operators outside the realm of formal financing institutions, leaving their scarce internal resources and concessionary government support as sources of finance.

Such lack of access makes ASM operators vulnerable to exploitation by predatory mineral traders, as seen, for

example, in Sierra Leone's "supporter" system.<sup>6</sup> Supporters are usually mineral buyers who try to ensure security of supply by financing mining operations, but as financiers of ASM operations, they extract unfair price concessions on the mineral products. Yet the miners have no option but to accept.

### Inadequate access to exploration and mining areas

ASM policies in many countries provide for designation of land or areas for exploration and mining activities. If properly implemented, such policies have the potential to reduce tensions between ASM and LSM. Such designation might result in fewer conflicts over exploration and mining areas and could create space for beneficial collaboration by the two sectors. Among the many benefits could be a reduction in environmental degradation associated with haphazard mining.

Yet such land designation has so far failed to solve these problems, largely because few of the demarcated areas have been properly surveyed for ASM. Detailed geological information to prove their suitability for ASM is rare, weakening the relevance of "reservation policies" for ASM. The challenge for policymakers is to find ways to conduct or fund comprehensive exploration to determine suitable areas for ASM and then provide such information to the miners.

### Difficulties in accessing markets

ASM has complex marketing arrangements that are often beyond the technical understanding of miners, especially for precious metals and gemstones. Some miners are tied to sponsors and providers of mercury (in the gold sub-sector) or providers of mining and processing tools. Prices rarely relate to market conditions because the sponsors set them. In this value chain, the miners are the least compensated. The lack of a transparent and well-developed end-user market (in jewellery, for example) further aggravates marketing challenges.

For industrial minerals and base metals, the paucity of local and regional markets reflects African economies' level of development. Other than aggregates for construction and road building, and lime for construction and agriculture, few African countries have industries producing basic consumer goods (such as paper, paint or talcum powder) to absorb large volumes of industrial minerals. These economies cannot absorb base metals, minerals or other industrial mineral products from ASM, hence these outputs are exported as ore or sold to LSM companies in arrangements rarely benefiting ASM operators.

### Conflict minerals

The informal nature of much ASM makes it amenable to illegal dealings, especially in high-value minerals such as diamonds, gold and coltan. The value chain for such minerals, from mining, through processing, trade and transportation to external markets is often characterized by leakage, particularly in countries recovering from conflict where prolonged security issues are part of the background to informal operations.

The nexus between natural resource exploitation and conflicts in Africa is well documented, particularly for the diamond value chain. Conflict diamonds<sup>7</sup> have been used by rebel groups to finance military campaigns against established governments.

As an informal activity with weak or non-existent legal protection, ASM is an easy victim of organized crime and paramilitary organizations. During civil strife in some countries (such as the Democratic Republic of the Congo

and Sierra Leone) proceeds from artisanal mining have reportedly been appropriated by warlords and rebel movements to finance war. In this way, artisanal mining has contributed to armed conflict. Efforts to end conflict by preventing the flow of artisanal mining revenue to armed groups have been relatively successful for diamonds.

Wider efforts are afoot to build a more robust legal and institutional framework for artisanal mining that would improve its resistance to takeover attempts by armed groups. The most important was coordinated by the Secretariat of the International Conference on the Great

Lakes Region (ICGLR). In December 2010 the Heads of State and Government of the ICGLR signed the Lusaka Declaration (box 5.1). This tracking and certification mechanism seeks to address the persistent illegal exploitation of natural resources in the region and its linkage to the proliferation of armed groups. The declaration notes various transparency and certification initiatives in the minerals sector, among them the Kimberley Process, and emphasizes the need for a regional approach in curbing the illegal exploitation of natural resources.

### **Box 5.1**

#### **Lusaka Declaration of the ICGLR special summit**

The Lusaka Declaration to Fight Illegal Exploitation of Natural Resources from the Great Lakes Region was signed in Zambia by the Heads of State and Government of Angola, Burundi, the Central African Republic, the Democratic Republic of the Congo, Kenya, the Republic of the Congo, Rwanda, the Sudan, the United Republic of Tanzania, Uganda and Zambia in 2010.

In the Declaration the Heads:

- Committed to fighting the illegal exploitation of natural resources through national, regional and international means;
- Approved six tools developed by the ICGLR Secretariat to curb the illegal exploitation of natural resources: the Regional Certification Mechanism to control the exploitation and trade of natural resources in the region; harmonization of national legislation; creation of a regional database on mineral flows; formalization of artisanal mining; promotion of the Extractive Industries Transparency Initiative (see box 7.2 in chapter 7); and enforcement of whistle-blowing mechanisms;
- Directed relevant institutions in the member States to implement the six tools, particularly the Regional Certification Mechanism;
- Committed to domesticating in their respective countries the Protocol on the Illegal Exploitation of Natural Resources in the Great Lakes Region;
- Encouraged the harmonization of the various transparency and certification initiatives operating in the region, such as the International Tin Research Institute Tin Supply Chain Initiative; and
- Called upon the international community to support and strengthen the ICGLR regional initiative against the illegal exploitation of natural resources.

The Southern African Development Community (SADC) has also developed a draft framework for tracking and certifying mineral products in or transiting SADC member countries. Its primary objective is to ensure that illegitimately acquired mineral products do not enter legitimate value chains, either in countries where mining and processing take place or in those through which the minerals transit. A secondary objective is to promote ethical practices in mining through transparent declarations of production and export figures.<sup>8</sup>

The task of rendering artisanal mining less easy prey for armed groups has been heightened recently by political decisions stemming from reactions to atrocities in the Democratic Republic of the Congo. The US Financial Stability Act, passed in July 2010, requires US companies to submit an annual report to the Securities and Exchange Commission disclosing whether their products contain tantalum, tin, tungsten or gold sourced from that country or adjoining countries. The law entered into force on 1 April 2011. The effect of the US law is that minerals from the central African region that do not possess verifiable chain-of-custody data would no longer be acceptable in international markets. The EU is reported to be considering similar legislation.

Yet progress in practice is slow. It has been fastest for tin and tantalum, under a project to provide reliable

certification led by the International Tin Research Institute. But even the institute has noted:

“We are not just talking about implementing a system in areas where conflict funding is known to exist, but in other provinces of the [Democratic Republic of the Congo], and other adjoining countries, an area covering practically a third of Africa. Realistically, with the resources available to us, it is unlikely that all cassiterite from the region can be covered by the system in time and many current production areas will unfortunately as a result be subject to an effective embargo by next April.”<sup>9</sup>

The consequences if tantalum, tin, tungsten or gold sourced from those countries are no longer accepted by international markets cannot be overstated. In the Democratic Republic of the Congo alone, the number of artisanal miners exploiting these minerals is estimated at 150,000–200,000, and higher in neighbouring the United Republic of Tanzania. Many people there would suffer a heavy loss of income and source of livelihood—primarily among the very poor with few alternative sources of income.

Governments therefore need to see to it that artisanal miners have realistic, practical and affordable means of certifying production before they enforce such legislation.

## Women's and child labour issues

Cultural practices and legal contexts continue to entrench the minority and disadvantaged status of women in ASM communities. An analysis of the ASM production chain shows that most women take part in the activities allocated to them by society (mainly men) and are barred from others because of cultural taboos. Key gender factors include the limited level of access to resources (exploration ground and financial resources) that would allow women to participate as miners. Women are generally disadvantaged in the ownership and possession of land, mineral rights, capital and equipment. In some countries, for example, land and mineral rights acquired when a woman is single pass on to her husband on marriage.<sup>10</sup> In the relatively few

instances that they have some access to resources, women do not control them or the resultant benefits.

Women benefit less from mining than men, but also suffer more from its negative impacts and the nature of the sector. For instance, environmental degradation affects women's capacity to provide clean water for their families and to source firewood for energy. This undermines their role as care givers. Some heavy-duty machinery and equipment for mining such as jack hammers is not easily used by women. Further, the difficult working conditions in mining areas do not accommodate the special needs of women including health and safety, reproductive roles and hygiene.

Within ASM communities, children are often involved in mining, either for themselves or as part of the family. The UN Convention on the Worst Forms of Child Labour identifies mining as “work, which by its nature or the circumstances in which it is carried out is likely to harm the health, safety and moral of children”. The convention has been ratified by 41 African countries, and the legal framework precludes young people under 18 from working directly in mines. This is often just ignored.

### Self-reinforcing nature of challenges

The challenges faced by ASM operators form a vicious circle and have a self-reinforcing effect on ASM activities. In particular, the lack of business and market knowledge, and lack of finance, can force them to sell to middlemen at low prices, perpetuating their poverty.

Child labour is detrimental to children’s education, as well as their long-term physical and psychological development. While the hazards of ASM faced by children are the same as for adult miners, the risks to young bodies and minds are much more severe as coping mechanisms develop with age. Some children, either willingly or forcibly, abandon schooling. This not only robs them of their future but diminishes the countries’ ability to achieve the Millennium Development Goals. In some poor communities, girls are more likely to be taken out of school to assist the family in livelihood activities than boys.

Artisanal miners are therefore kept in a poverty trap where their operations rarely graduate above subsistence and remain economically and environmentally-unsustainable. Hence there is a need for government support.

## Addressing the challenges: Some country initiatives

The literature has many recommendations on addressing the challenges outlined in previous sections. The compendium on best practice for ASM published by UNECA (2002) provides a catalogue of experiences from Africa, some of which are reproduced in the following section.

Many countries have reviewed their policy frameworks to facilitate the growth of ASM so that it can play its role in national development and reduce poverty. They have increasingly mainstreamed ASM into poverty reduction strategies. Some have passed legislation to simplify legal requirements, and others, such as Ghana and Zambia, have changed the law to improve the environment for ASM. Yet despite these moves, the duration of mining rights and size of concessions remain constraints in some countries.

Beyond policy and legislative shifts, most countries’ approaches have responded to specific challenges. Yet a holistic approach is needed to address the poverty cycle that limits ASM development. The self-reinforcing nature of the challenges underlines the limits to new regulations on health and safety or the environment without improvements to access to technology, finance, and information

and support services. Similarly, tightening regulatory compliance without raising awareness of legal obligations and, more important, capacity to comply, does not help to eradicate illegal mining.

In addition, although African governments may well recognize the above fundamental policy and regulatory approaches, their weak capacity may hamper practical application. Future policy needs to be structured so that the resultant regimes have an effective implementation plan supported by the necessary technical government capacity.

Several examples illustrate the unsustainable nature of donor-driven initiatives,<sup>11</sup> underlining the need for a different and more sustainable framework. Donor-driven schemes may fill a short-term gap but they cannot guarantee the long-term viability of technical support centres—self-sustaining funding mechanisms are required. Many mechanisms had no strategies for the handover of mature programmes to the government at the end of the project. Further, the lack of domestic capacity to produce appropriate technology for small-scale mining and processing may have played a role. And there is always the

**Box 5.2****Lessons from Ghana: Ill effects of well-intentioned policy**

With the aim of scaling up ASM from the use of rudimentary equipment to mechanized and more efficient methods, the Ghana Minerals Commission began registering Mine Support Service Companies to provide technical and financial support services to small-scale miners. Even though some smaller mining operations gained from this policy, the introduction of heavy equipment into the sub-sector has led to their use by informal miners, too. For instance, Chinese *chang fa* (processing equipment) is now commonly used by miners.

The use of such heavy machinery has harmed the environment. In addition, the allure of quick returns from mechanization has caused the informal sector to proliferate. There may be more than 500,000 miners operating informally, including some encroaching on LSM concessions. Given miners' failure to follow good mining practices, their mechanized activities have increased the number of accidents, through pit and embankment collapses, for example.

Now the challenge for Ghanaian regulators is to implement policies that will control the harmful effects of miners' activities, by providing suitable land and by discouraging people from operating outside the regulatory framework.

**Source:** *Ghana Minerals Commission.*

danger of well-intentioned policy measures undermining the original objectives, unless the measures are well managed and monitored indicated in (box 5.2).

Some countries have taken steps to help ASM operators to market their minerals. Measures include liberalizing trade in ASM mineral products (for example, in the United Republic of Tanzania) through explicit licensing procedures, requiring well-structured documents indicating quantities bought and sold. In Ghana, the state-owned Precious Minerals Marketing Company as well as some private companies are authorized to operate as the market for precious minerals. These companies are allowed to appoint agents to undertake their purchases, which they may directly export with appropriate central bank and customs documentation.

In Ethiopia miners are required to sell their products to the central bank. The bank also allows the miners to deposit their minerals, which are held in trust for them, until they sell. This enables the miners to take advantage of favourable prices. In Mozambique, the Mining Development Fund, set up by the Government, plays a dual role in assisting (financially and technically) and promoting

ASM, as well as acting as a gold buyer,<sup>12</sup> particularly in remote sites where miners have little access to competitive markets. In these remote areas this fund is often the only legal buyer.

Nevertheless, illicit trade, particularly in precious minerals, remains rampant. One approach adopted by the Precious Minerals Marketing Company in Ghana, and previously implemented in Zimbabwe, is to offer guaranteed close-to-market prices, in order to cut the number of middlemen and predatory traders. Another avenue is for the authorities to establish an audit trail of purchases of precious minerals to individual (registered) mines before issuing an export permit. The ICGLR tracking and certification scheme and the Kimberley Process Certification Scheme are examples.

For its part, SADC has developed a draft framework on illicit mineral trade. Integrating this framework and the ICGLR scheme would greatly strengthen efforts to tackle illicit mineral flows across many more countries in Africa.

Given the paucity of exploration funds, as said, the government is the primary source of assistance for ASM



**Box 5.3****Small-scale mining loans in Ghana**

Ghana's small-scale mining loan scheme was set up in 2006 with funds from the Heavily-Indebted Poor Countries initiative and the Government's Mineral Development Fund. So far, about \$500,000 has been disbursed.

Most beneficiaries are gold miners, though some are salt producers. To qualify, miners have to form cooperatives and be bound by the terms of the loan. The loans are made out in the form of cash for working capital, as well as for mining equipment and consumables, and are approved by a loans disbursement committee (made up of officers of the Minerals Commission).

The beneficiaries are required to repay the loan in agreed instalments (at a subsidized interest rate) when production begins. A licensed buying agent of the Precious Minerals Marketing Company or an approved dealer acts as a guarantor to ensure that with each given volume of mineral sold the agreed amount is paid into a loan recovery account. The rate of repayment has been fairly high, but could have been higher with tighter security.

*Source: Ghana Minerals Commission.*

operators making preliminary geological investigations. Some government-supported loan schemes have provided loan finance.<sup>13</sup> The Mining Development Fund in Mozambique referred to above is an example.<sup>14</sup> In South Africa the government helped to set up the African Mining Fund, with the support of the International Finance Corporation (the World Bank's private sector investment arm), to provide finance for small-scale miners. Ghana, too, has experimented with loans (box 5.3).

Financial assistance schemes for ASM that are run along business lines, such as revolving funds, assume the ability to pay back the borrowed funds, as perhaps demonstrated through business plans. The issue has always been, however, that ASM operators struggle to pay back loans, progressively reducing the funds available for other borrowers, usually leading to a collapse of the fund.

Although a range of mechanisms, such as equity-based financial schemes, joint-venture partnerships, venture capital funds, investment bank funding, and unit trust or mutual funds, are also available in some countries, they impose conditions that ASM operators cannot meet.

However, there are a few exceptions. An amethyst joint venture between a Zambian company and a Swedish partner, underwritten by HIFAB, a Swedish donor agency, is one. Another, also in Zambia, was Sable Zinc, a zinc tailings recovery project. The company was formed by ex-miners and a technical partner with experience in the processing of zinc, with support from the Commonwealth Development Corporation.<sup>15</sup>

An important lesson is therefore that ASM operators require the backing of a competent technical partner to access finance. Lenders and equity investors seek demonstrated management experience and robust cash flows underwritten by good ore reserves among other things—attributes conspicuously absent among ASM operators.<sup>16</sup>

Cooperation between small- and large-scale miners is another route for ASM operators to access finance and technical support, and could involve mentoring. An LSM company would, for example, adopt several small companies and provide technical and business support, including guaranteeing their borrowings from commercial institutions. The smaller companies are expected to graduate into fully-fledged businesses over an agreed period, normally



five years, after which the LSM company ceases mentoring this company and adopts another.<sup>17</sup>

Productive collaboration between ASM and LSM has not been fully exploited. Mentoring offers gains to both sides. For LSM, it boosts the corporate image and community acceptability, offers financial returns from sub-contracting out non-core functions and improves relations with small-scale mining companies. For ASM operations, it helps to transfer technology and skills (entrepreneurship and expertise) cheaply. Further, it allows small-scale miners access to working capital, promotes legal, environmental and regulatory compliance, and improves overall workings as miners adopt best practice.<sup>18</sup>

Yet important policy and structural issues need to be resolved before such mentorship can deliver its full potential. The approach needs to be adapted for artisanal miners, who are not as organized as small-scale miners. Further, once introduced the policy needs to be monitored and adjusted where necessary (see box 5.2).

In South Africa mentorship and preferential sub-contracting are all part of the Mining Charter, suggesting a way forward in which national laws and policies are developed to enforce sub-contracting and mentoring programmes by LSM. The Mining Charter and the Mineral and Petroleum Resources Development Act are examples of good practice in stimulating corporate social responsibility (CSR) and corporate social investment (CSI).

CSR/CSI and mentoring initiatives are outside mining companies' core functions, and they come at a cost. An incentives system has to be put in place to explicitly link CSI, sub-contracting and mentoring initiatives, possibly as a CSI scorecard to track progress. Subregionally, however, CSR/CSI initiatives from LSM corporations tend to be philanthropic and public relations exercises, and mentoring offers few success stories.

It would therefore be useful to explore an approach at the regional economic community level to harmonize policy and regulations to encourage standard practice. Certainly there is scope for developing a "regional tool kit for engagement" between LSM and ASM so as to optimize the benefits of this relationship.<sup>19</sup>

The above discussion makes clear that converting ASM into viable operating enterprises is an onerous task. A pragmatic approach to distinguish potentially-viable ASM operations (for targeted support) from marginal outfits is appropriate, and a United Nations Economic Commission for Africa workshop in Johannesburg in 2009 suggested some criteria:

- Access to technical skills—technical and business expertise;
- Rights to viable mineral resources—location, size and quality;
- Access to technology—including understanding of technology alternatives;
- Entrepreneurial spirit—demonstrated willingness to continuously master the business, seek partnerships and show drive to succeed;
- Legal and regulatory compliance—willingness to observe environmental and labour laws;
- Access to markets—understanding demand and supply dynamics; and
- Agglomeration into small groups—these need to be run along business lines.

Gender presents its own challenges, which are well recognized in regional frameworks. The African Union (AU) recognizes the equal rights of women in all aspects of human socio-economic endeavour and the principle of gender equality is stated in Article 4 (l) of the Constitutive Act, which has since been reaffirmed.<sup>20</sup> The regional economic communities have protocols for addressing gender disparities. Yet African member governments need to improve the pace of domestication of the various regional, continental and international instruments on human and women's rights. Gender analysis processes should be applied to mining projects, including gender-disaggregated data, to track improvements.

From a regulatory viewpoint, the provision of women-friendly facilities and technology in mining areas could

be made mandatory and a legal requirement for issuing a mining permit or allocating mining rights.<sup>21</sup> To the extent possible, mining equipment should be ergonomically- designed to be women-friendly. Training and gender advocacy campaigns need to be mainstreamed in mining areas incorporating the International Labour Organization (ILO) principles of a decent work environment that is gender sensitive and free of sexual harassment.

Schemes for providing financial and technical assistance should be sensitive to women's needs. Sources of capital would require affirmative action principles to be applied in granting loans and credit. A proportion of funds for ASM should be reserved for women, to complement dedicated

funds, such as the AU African Women's Trust Fund. Information on these sources needs to be disseminated widely.

Policies on ASM need to address child labour. The ILO's programme Minors out of Mining, launched in 2005, aimed to eliminate child labour in ASM completely within 10 years. It is a tripartite effort initiated by governments with support of the industry (companies and workers) and the ILO. African countries in the programme include Burkina Faso, Côte d'Ivoire, Ghana, Mali, Senegal, the United Republic of Tanzania and Togo. The programme should form a fundamental aspect of strategies to keep children in school.

## Policy implications

The AMV foresees a mining sector that is safe, healthy, gender and ethnically-inclusive, environmentally-friendly and socially responsible. It aspires to harnessing the full potential of ASM in stimulating local and national entrepreneurship and in improving livelihoods. It also aims to promote an integrated approach to rural social and economic development. The AMV further emphasizes the aspirations of the Yaoundé Vision for ASM which was adopted in 2002. Extracts from the Vision Statement are reproduced as appendix K.

Along this perspective, ASM policy has to be formulated and implemented as part of a broad rural development strategy, and should include:

- Regularizing informal ASM;
- Simplifying and decentralizing procedures for acquiring ASM rights;
- Providing a realistic implementation plan, including institutional capacity enhancement;
- Assisting miners to graduate from subsistence to sustainable businesses;
- Assuring a legal regime that gives ASM rightholders enough land, duration of rights and security of tenure;
- Providing accessible institutional, technical and financial support;
- Encouraging support for ASM from the more established private sector (including LSM);
- Expanding exploration work that leads to the designation and allocation of areas for ASM;
- Ensuring regional and international cooperation to address the challenges of conflict minerals;
- Raising capacity locally to run tracking and certification schemes before enforcing bans on transporting non-compliant minerals;
- Enforcing international norms prohibiting child labour;
- Exploring and launching measures to redress discrimination against women, whether due to the law or operation in practice; and
- Promoting subregional cooperation in technology development, research, construction of appropriate plant and machinery, technical standards, compilation of a database of local capacity and generation of financial resources.

## Endnotes

- 1 UNECA, 2002.
- 2 Communities and Small Scale Mining, [www.artisanalmining.org](http://www.artisanalmining.org).
- 3 Hinton et al., 2003.
- 4 Telmer and Veiga, 2008.
- 5 For example, Hentschel et al., 2003; Hinton et al., 2003; Mondlane et al., 2005; UNECA, 2002, 2009a.
- 6 Levin and Gberie, 2006.
- 7 Conflict diamonds are diamonds that originate in areas under the control of armed forces fighting elected and internationally-recognized governments.
- 8 Several SADC countries, namely Malawi, Namibia and Zimbabwe, though not member States of the ICGLR, are partner countries to the ICGLR Declaration. Since such declarations and protocols always place reciprocal responsibilities on participating and partner countries, the logical way forward would be to harmonize the ICGLR tracking and certification scheme with that of SADC, when the latter has been adopted.
- 9 ITRI, [www.itri.co.uk](http://www.itri.co.uk); 23 November 2010.
- 10 UNECA, 2009.
- 11 Including the Tarkwa Small-Scale Mining Centre in Ghana and the Uis Tin Mining project in Namibia.
- 12 Mondlane, 2009.
- 13 Svotwa, 2000.
- 14 Drechsler, 2001.
- 15 UNECA, 2002.
- 16 Goss, 2009.
- 17 UNECA, 2009a.
- 18 UNECA, 2009a.
- 19 UNECA, 2009a.
- 20 For example, the Assembly of Heads of State and Government of the AU in July 2004 reaffirmed the commitment to African and international instruments on gender equality.
- 21 UNECA, 2009a.

# Corporate Social responsibility initiatives

## 6 CHAPTER

*“It is necessary for mining companies to embrace the notion of CSR in order to contribute to wider development objectives. As CSR approaches could be voluntary or legislated, it is important to entrench CSR in any policy framework in a manner that is clear about the responsibilities of mining companies and government”—The Africa Mining Vision*

**THIS CHAPTER DISCUSSES** the scope and drivers of corporate social responsibility (CSR) and the application of the framework in Africa’s mining industry. It examines the benefits and limits of CSR as well as the challenges that practising it by mineral companies in Africa face in state capacity and societal expectations of development.

The past couple of decades have been marked by initiatives designed to acknowledge and expand the social

responsibility of business entities. The premise has been that the roles and impacts of these entities go beyond providing revenue and employment and maximizing profits, thus increasing shareholders’ value, that they have power and influence (actual and potential) beyond their formal location within legal and political structures, particularly those of developing countries, and that they should be recognized as conscious and influential participants in activities with a broad range of consequences. Companies have social responsibilities that go beyond profit maximization as part of their contribution to overall sustainability.

There is no generally accepted definition of corporate social responsibility and no consensus on the list of the issues it covers. But “most definitions of corporate social responsibility describe it as constituting actions whereby enterprises integrate societal concerns into their business policies and operations, including environmental, economic and social concerns. Compliance with the law is the minimum standard to be observed by enterprises”.<sup>1</sup> After analysing numerous descriptions of CSR, one study concluded that “the challenge for business is not so much to define CSR, as it is to understand how CSR is socially-constructed in a specific context and how to take this into account when business strategies are developed”.<sup>2</sup>

## Evolution of CSR as a tenet of sustainable development

The global growth and institutionalization of CSR have been strongly driven by the demands and pressures of the growing environmental consciousness of citizens and concerns about the extensive powers and rights that corporations have acquired with economic liberalization. These concerns have been expressed through pressures for ethical investment, social movements on issues such as the environment, fair trade, consumer rights, humane labour conditions, the rights of indigenous people and greater corporate accountability and transparency. In the western countries of the biggest transnational corporations, the emergence of powerful international non-governmental organizations coupled with advances in information technology mean that cases of social or environmental irresponsibility can spread quickly around the world, thus increasing the reputational risk firms face. Enterprises with large social and environmental footprints such as mining have been very much in the forefront of those targeted by demands for high standards of CSR. Since the 1992 United Nations Conference on Environment and Development, CSR has been increasingly linked with sustainable development. In mineral exporting African countries mining companies are among the main focus of demands on CSR. This is not only because of the major environmental and social impacts of their operations (chapter 4), but also because these impacts are amplified by the fact that their operations tend to be located in relatively under-developed parts of host countries.

The path towards embracing CSR as part of a sustainable business model has been long. Traditionally, business viewed CSR as a “soft issue” that represented financial contributions—as corporate philanthropy or charity. Focus on CSR projects that went beyond charitable donations to worthy causes or organizations was viewed as shifting from the “core business”, and thus as leading to lower productivity, higher costs and waste of human and

financial resources. Dealing with communities and related stakeholders was seen as time consuming, and project managers were reluctant to engage in discussions with stakeholders. Without frameworks compelling mining companies to do this, community concerns continued to be treated as peripheral, and any contributions were charity. These views have changed as business now accepts that CSR is necessary. For the global mining industry the Mining, Minerals and Sustainable Development (MMSD) project (2000–2002) was an important milestone representing the industry’s first serious response to growing pressure to consider all stakeholders affected by mining. During the project, stakeholders were consulted to identify key issues relating to mining and sustainable development. The MMSD was an important milestone for industry recognition of its role in contributing to sustainable development priorities on social development as well as environmental stewardship.

Today there is a proliferation of CSR frameworks, norms and reporting formats—some legislated, but most guidelines or voluntary codes. They are from diverse sources including United Nations (UN) conferences, intergovernmental bodies such as the UN and its affiliate bodies—the International Labour Organization (ILO), the Organization for Economic Co-operation and Development (OECD) and the World Bank—national legislation, groups of international private financial institutions, industry associations and multi-stakeholder bodies. Many have overlapping objectives but different reporting formats. CSR frameworks and norms applying to mining have originated from all these sources. The multiplicity and diversity of CSR frameworks and norms have helped integrate CSR into everyday business operations, but these myriad sources and frameworks “are uncoordinated and so generate confusion”.<sup>3</sup>

### Intergovernmental processes and frameworks

UN conferences have been important in establishing the growing link between CSR and sustainable development. In 1992 at the Rio Earth Summit, governments agreed to adopt principles of sustainable development, focusing on

environmental impact and mitigation of industrial activities on the physical environment. There was a specific protocol on forestry management. The governments agreed to hold a World Summit on Sustainable Development every 10 years

**Box 6.1****World Earth Summit 2002 declaration (excerpts)**

Mining, minerals and metals are important to the economic and social development of many countries. Minerals are essential for modern living. Enhancing the contribution of mining, minerals and metals to sustainable development includes actions at all levels to (para. 46 world Earth Summit Declaration):

Support efforts to address the environmental, economic, health and social impacts and benefits of mining, minerals and metals throughout their life cycle, including workers' health and safety, and use a range of partnerships, furthering existing activities at the national and international levels among interested governments, intergovernmental organizations, mining companies and workers and other stakeholders to promote transparency and accountability for sustainable mining and minerals development;

Enhance the participation of stakeholders, including local and indigenous communities and women, to play an active role in minerals, metals and mining development throughout the life cycles of mining operations, including after closure for rehabilitation purposes, in accordance with national regulations and taking into account significant trans-boundary impacts; and

Foster sustainable mining practices through the provision of financial, technical and capacity-building support to developing countries and countries with economies in transition for the mining and processing of minerals, including small scale mining, and, where possible and appropriate, improve value-added processing, upgrade scientific and technological information and reclaim and rehabilitate degraded sites.

*Source: Johannesburg World Summit Plan of Implementation on Sustainable Development.*

to measure progress and refine commitments. Ten years after the Rio Earth Summit, the 2002 World Summit on Sustainable Development was held in Johannesburg, for the first time including a global commitment to advance mining as a vehicle for sustainable development (box 6.1).

The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, established after the World Summit to guide governments' follow-up on global commitments related to mining contained in the Johannesburg World Summit Plan of Implementation on Sustainable Development, provides best practice analyses for governments on a range of mining and sustainable development issues. It responded in part to the need to establish an intergovernmental body to debate mineral policy issues within the framework of the Johannesburg Programme of Action.

The UN Global Compact was started in 2000 by the UN Secretary-General as a strategic policy initiative for businesses that are committed to aligning their operations and strategies with 10 universally-accepted principles in human rights, labour, environment and anti-corruption. Responsibilities of the private sector in community development are not specifically included. Currently more than 8,000 companies from more than 120 countries, including some of the largest mining firms, participate in the Global Compact.

The OECD has issued several frameworks such as the 1976 OECD Guidelines for Multinational Enterprises and the 1997 International Convention on Combating Bribery of Foreign Officials. The Guidelines for Multinational Enterprises, a set of non-binding recommendations, set out voluntary principles and standards for multi-national corporations operating in or from OECD member countries on issues such as human rights, environment, information



disclosure, bribery, consumer interests and employment and industrial relations. The convention on bribery has

provided the basis for anti-bribery legislation in OECD member countries.

## Other initiatives and frameworks

The Performance Standards of the International Finance Corporation (IFC)—which form part of its Sustainability Framework and the Equator Principles, both discussed in chapter 4—are the most notable CSR frameworks established by financial institutions. All private sector projects that are financed, even partly, by the IFC have to comply with the standards. More than 70 major banks including Barclays, RBS, BNP Paribas, Citigroup and JP Morgan Chase have voluntarily subscribed to the Equator Principles, which the banks must apply to all clients who borrow \$10 million or more. The Independent Review Mechanism of the African Development Bank (AfDB), through its twin-pronged mediation and compliance review mechanisms for the projects funded by the AfDB, helps strengthen CSR and, especially, the need for extensive consultation with communities. The compliance review process allows for introspection into the Banks adherence to its own norms and standards.

The International Council on Mining and Metals (ICMM), established in 2001 to improve sustainable development performance in the mining and metals industry, currently includes 20 of the largest mining and metal companies, as well as 31 national and regional mining associations and global commodity associations. The ICMM's Sustainable Development Framework, which emerged from the MMSD, is the main industry framework for sustainable development and CSR. The 10 principles of the ICMM Sustainable Development Framework commit members to, among others:

- Integrate sustainable development considerations within the corporate decision-making process;
- Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others, and seek continual improvement in health and safety performance;
- Seek continual improvement in environmental performance, and contribute to the social, economic and

institutional development of the communities in which they operate; and

- Implement effective and transparent engagement, communication and independently-verified reporting arrangements with their stakeholders.

Many major mining companies now publish annual sustainability reports in addition to more conventional financial reports in an attempt to satisfy the new international stance. But the challenge has been to develop indicators and reporting formats, making for meaningful evaluation of a business' CSR activities. The ICMM has teamed up with the Global Reporting Initiative, a framework for industry reporting on social and environmental management. The Global Reporting Initiative has been important for developing meaningful indicators and formats. Many corporate bodies now issue reports of their application of CSR principles even where the operating conditions do not make it mandatory.

ISO 26000 "Guidance on social responsibility" is a good example of a framework from a multi-stakeholder process. The process that preceded the adoption of ISO 26000 in September 2010 by the International Organization for Standardization involved a number of major non-governmental organizations, business organizations, more than 400 experts from 30 countries and understandings with international bodies such as the ILO and OECD. ISO 26000 has been described as building on "the Brundtland definition of sustainable development by defining social responsibility as the responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organization and practised in its relationships".<sup>4</sup>



## Government legislation

Some African countries have created statutory frameworks for CSR. The Mineral and Petroleum Resources Development Act(2004) of South Africa, for example, requires an applicant for a mining right to submit social and labour plans. In the words of regulation 41, “the objectives of the social and labour plan are to: (a) promote employment and advance the social and economic welfare of all South Africans; (b) contribute to the transformation of the mining industry;(c) ensure that holders of mining rights contribute towards the socio-economic development of the areas in which they are operating”. The regulations prescribe that the social and labour plan must contain elements in specified detail of a human resource development programme, a local economic development programme and processes pertaining to management of downscaling and retrenchment, and must provide financially for the implementation of different aspects of the social and labour plan.<sup>5</sup>

When granted the mining right, the applicant must comply with the social and labour plan and make it known to employees. The plan may only be amended with the consent of the Minister of Mines. An approved plan legally requires that the holder of the mining right comply with its terms. The holder of the mining rights must submit annual reports on compliance with the plans. In a typical lifecycle approach, the social and labour plan attempts to address socio-economic, ownership, technical skills development and post-mining issues. But the framework is static and does not provide mechanisms to address emerging challenges as mining operations progress.

The Nigerian Minerals and Mining Act (2007) also requires the holder of a mining right to conclude with the community where its operations are to be conducted

“a Community Development Agreement or other such agreement that will ensure the transfer of social and economic benefits to the community” (section 116[1]). The agreement, to be reviewed every five years, must address “all or some ... [matters] when relevant to the host community”, which are set out in section 116(3), as well as mechanisms for the community to participate in the “planning, implementation, management and monitoring of activities carried out” under it (section 117). Submitting the agreement to review after five years allows for incorporating emerging challenges as new information surfaces, while also strengthening the approaches already in use. The five-year period is reasonable for the stability required by investors.

The Berlin Guidelines of 1991 represented an attempt by mining companies to ensure that they adhered to home country standards while operating abroad. Recently, particularly in Australia and Canada, there has been discussion about using domestic legislation to promote socially-responsible conduct abroad by corporations based in those countries and their subsidiaries or affiliates. Opponents of these proposals have suggested that such legislation would invade the sovereignty of the countries in which those corporations operate. Others have argued that the legislation would impose disadvantages on their corporations compared with their competitors from countries without similar legislation. By contrast, some proponents argue that it is in the interest of the home country that its corporations act in accord with internationally- acceptable standards, particularly when they operate in developing countries where institutions or legal regimes may be weak. This controversy was exemplified by the debate in Canada over the abortive Bill C300, introduced by Liberal Member of Parliament John Mackay.

## Promoting social and community development

The evolution of CSR has led to the mining industry accepting that implementing community development programmes and behaving as responsible corporate citizens are good business. Mines, particularly when situated in remote areas, require a good relationship with their

communities—they need to obtain and maintain a social licence to operate as well as satisfy their company’s corporate goals and shareholder expectations. Mining companies now accept that for communities in which they operate to live without basic services such as water, health

care, electricity and sanitation is unacceptable for good business. These communities often lack social infrastructure such as schools, clinics, hospitals and dispensaries, and their roads and other transport infrastructure are usually poor. Developing a mine presents an opportunity to improve conditions in these communities. Unless the community where the mine is located benefits from the investment and infrastructure associated with the mine, it will remain enclave. The mine and its wealth are highly visible, and the pressure is immense to share this wealth with the local areas that have little development.

Many companies understand that addressing CSR needs in communities will benefit them, so adopting CSR is enlightened corporate “self-interest”. It is not simply a business expense but rather a capital investment with an expected return on investment. At the operational level, companies can maximize production because there will not be work stoppages due to community unrest. This contributes to their overall competitiveness and improves work performance. At the strategic level, the overall risk of investment declines, thus increasing the value of the company’s social investments. Externally, good CSR programmes increase “political capital” with host governments, enhance investor relations and tangibly demonstrate a company’s corporate citizenship philosophy, adding to share value.

Failing to provide tangible benefits to communities can result in a company losing its social licence to operate. And it has resulted in civil unrest initiated by communities in many countries in Africa and South America, leading to delays in mining production, injury or death, negative press coverage, damaged reputations and, ultimately, lowered share price.

Communities have the means at their disposal to stop mining operations for extended periods of time. A community in Papua New Guinea cut down about 30 kilometres of electricity poles, thus stopping power and shutting down the mine for about six weeks. Blockades on roads, armed occupation of mining lease areas, kidnapping of mines officials and other types of community revolt have occurred in areas where communities lack a voice and where mining companies and the host government have not considered their needs and aspirations. These

disturbances and social costs pressured mining companies to incorporate CSR as a part of doing good business.

Civil disobedience and unrest in mining areas have a number of negative consequences. A mining company could suffer damage to its reputation with the public, shareholders, potential investors and financiers. Its shares could plummet. And it could have difficulties expanding its operation to new destinations. For governments, repressive intervention to deal with the situation can be characterized as “lose-lose”. If police or military acts to ensure that a mine continues to operate and moves into an area where communities are revolting against mining, it may result in injuries or deaths. The negative political fallout for the government and the country’s reputation is unpredictable. In some cases, court actions against government or the mining company can drag on for years, deterring development of the mining project in the meantime.

Companies have sought to contribute to the social welfare of communities affected by mining activities, either directly or indirectly, through establishing trust funds to fund projects for the community’s benefit. These funds have sometimes been established following arrangements setting out a formula for funding the trust from the income of the business.

A tri-sector partnership approach has been adopted to address these challenges. The partners in this approach are the company engaged in developing or planning to develop a resource, civil society organizations such as community groups, non-governmental organizations and churches, and local and central government institutions. The objective is to collaborate in community development projects by identifying and contributing resources that each partner can provide. Such arrangements enable companies to provide some resources to the community without legal obligation and without raising unsustainable community expectations or encouraging dependency on the companies. The partnership seeks to recognize that civil society groups are often more familiar with the community and its needs than others, and can contribute to or mobilize participation in a project based on their local knowledge. The resources of the local and

central government could be monetary or capacity help in coordinating the project.

Agreements between mining companies and community representatives have also become instruments through which the former contribute to local development. In Australia, Canada and the United States, aboriginal groups have gotten the legal system to acknowledge their rights over designated areas of land and that they are entitled to negotiate terms on which resource developers can access such areas. The terms negotiated are typically contained

in impact and benefit agreements. Typically, they contain provisions aimed at advancing employment skills training as well as educational and business opportunities for members of the community. They also require payments (royalties, profit shares, trust funds for designated purposes) to the community or compensation to members of the community who suffer loss as a result of the resource development. These agreements entrench company responsibilities towards the welfare of communities at large, not just their employees.

## CSR and development effectiveness

CSR norms, frameworks and reporting requirements applying to mining firms are clearly from multiple sources and a combination of the legislated and the voluntary. The efficacy of voluntary codes as opposed to mandatory codes is one of the most important debates over CSR, with its predominantly voluntary nature being seen as a growth of corporate power and retreat of the state. Voluntary CSR, as opposed to state regulation, has been described as the corporate equivalent of what poverty alleviation measures, such as targeting and social funds, were for the public sector and the aid community, all elements of the post-Washington Consensus response to the negative effects of crude market liberalization of the 1980s.<sup>6</sup> Voluntary CSR codes and guidelines have also been criticized for the rather haphazard and selective content of their codes and their lack of effective implementation mechanisms or procedures for monitoring compliance. Picciotto (2011) argues that voluntary codes have their advantages, including more easily reaching agreements on detailed and specific terms on obligations, which can be more easily applied to firms than would be the case if codes are binding on states. Furthermore, they are easier to amend and more flexibly tailored to the requirements of specific businesses and avoid some of the rigidities around bureaucratically-enforced laws.

Not all voluntary codes or guidelines are without legal effect. Certain voluntary CSR initiatives such as codes of conduct included in contracts with suppliers can become legally-binding as de facto minimum standards. Social labelling and certification schemes incorporated into

supply chain contracts become binding.<sup>7</sup> So, “on closer examination, it also becomes clear that it is inaccurate and inappropriate to treat these instruments as existing outside or beyond the law. Codes entail a degree of formalization of normative expectations and practices. They also interact in various ways with formal law. ... In practice, as already stated, effective compliance inevitably depends on the monitoring and enforcement mechanisms which can be devised, and especially on the strength of social and political pressures... the question is not whether hard and soft law are mutually-exclusive, but how they can best be combined to produce effective regulation”.<sup>8</sup>

The scope of issues and the approaches to CSR in Africa’s mineral exporting countries confirm earlier points that CSR is socially-constructed in specific circumstances and that what is enforced and the efficacy of enforcement are not solely a function of the legal status of CSR but also of the strength of political and social pressures. Despite the CSR of many mining firms formally covering governance and ethics, employment, occupational health and safety, community and environment, a sample of African countries shows a preponderant interest and focus of the state, civil society organizations and the public on the environment and community issues, such as livelihoods and human rights abuses. Despite the widespread casualization of work and the employment of contract labour in Africa’s mines, there is substantially lower focus by the state and public on the working conditions of mine workers. In South Africa—because both history and the fact that the trade union movement, including the mine

workers union, are strongly linked with other social movements—workplace issues have a stronger prominence than in other African countries. In Ghana, for example, the work conditions and health and safety of workers in the mines are almost completely absent from the lively public discussions and non-governmental organization campaigning, which are largely directed at environmental and community and human rights issues.

Zambia illustrates how historical experiences can also shape expectations of mining company's CSR. Contemporary Zambian discussions of mining companies' CSR activities draw unfavourable comparisons with the practices of the now defunct state-owned Zambian Consolidated Copper Mines (ZCCM), which operated a "cradle to grave" corporate responsibility welfare policy. In the context of national policy of state provision of health and education, the ZCCM provided medical services, sanitation, schools and social amenities to the communities living on the Copper belt. This ended with the liquidation of the ZCCM and privatization of its mines. All the successor foreign-owned private mining firms have CSR programmes but nothing of the scope or scale of the ZCCM.<sup>9</sup>

In other African countries the mismatch between the expectations of stakeholders and what companies are actually doing has more to do with immediate factors than comparisons with the past. In Ghana a company offered support for alternative agricultural activities to people its gold mine displaced when most of the target group would have preferred training in artisanal skills or access to part of the mining concession land, which was not in use, for artisanal gold mining.<sup>10</sup> Attention has also been drawn to similar divergences between the CSR of mining companies in South Africa and the post-apartheid expectations of workers and communities.<sup>11</sup>

## Policy implications

It is no longer possible or feasible for mining companies to treat their contributions to social issues in communities and other CSR issues as peripheral to their core businesses. Whether from an assessment of measures required to be taken in the enterprise's own judgment to maintain

These mismatches between CSR and society's expectations are situated within a larger question of how much CSR can contribute to resolving some of the many development challenges that mineral rich developing countries face—as well as resolving accusations of corporate double standards in energetic implementation of CSR activities by many firms while engaging in practices much more damaging than what the CSR is ameliorating. In pressing developing country governments to minimize their taxes and royalties, mining companies are effectively weakening the fiscal capacity of the state. By contrast, these companies implement CSR policies and publicize their contributions to social infrastructure that the state is too poor to afford but which cannot fulfil what is needed. Many firms, even as they proclaim their social responsibility, increasingly rely on casualized contract labour working on insecure terms and may pay many workers' wages that, though meeting the legislated minimum, are not livable wages.<sup>12</sup>

A thorny issue posed by the expectations of CSR in community development is defining the boundary between the state's responsibilities to its citizens and how mining company's CSR complements the state's efforts. In many African countries the coordination between state planning and investment and CSR investments is inadequate. More significant, CSR could reduce the motivation of government to fulfil its responsibilities to its citizens, and the latter could come to see the company as the provider of those services that they should be looking to the state for.<sup>13</sup> Better coordination between planning and investment of the state and corporate outlay under CSR could improve the value of both streams of expenditure. So, for example, the sustainable use of a school or clinic built as part of CSR is better assured if the project is coordinated with the state—to ensure that it fits into a larger plan and that the state can support health staff or teachers should the mine cease its support.<sup>14</sup>

a sustained and viable business, or as a precondition for obtaining an essential licence or financing, or to avoid liability for breaches of the law, the pressures to comply with norms regarding socially-responsible conduct are becoming increasingly important. While significant attention is

focused on addressing community issues, more remains to be done to meet expectations by communities and to respond to other issues such as trade union concerns about casualization and the larger decent work agenda.

From a policy perspective, CSR initiatives should not be considered a substitute for government responsibility towards its citizens in providing basic infrastructure and other public goods. Indeed, CSR initiatives should complement government efforts through local government institutions and local authorities. The framework that a government chooses to entrench CSR should be clear about the responsibilities of mining companies and which responsibilities should be matched with and communicated to mining communities.

The different types of frameworks should be considered part of a national policy debate on the mining industry's

obligations regarding social development objectives. Without such debate, there is danger that the CSR requirements in a jurisdiction will be left to the industry to determine. This ad hoc approach can lead to uncertainty of how much should be spent on CSR and what types of CSR projects should be developed as well as the mechanisms for their development. Indicators around assessing the impact of good CSR projects must be built into the framework and applied by a range of stakeholders, such as civil society. The framework must focus on stakeholder consultation and allow for review of obligations and commitments. This review must be based on reporting requirements that should be part of the CSR framework.

## Endnotes

- |   |                                |    |                           |
|---|--------------------------------|----|---------------------------|
| 1 | UNCTAD, 2004.                  | 8  | Picciotto, 2011.          |
| 2 | Dahlsrud, 2008.                | 9  | Lungu and Mulenga, 2005.  |
| 3 | UNCTAD, 2004.                  | 10 | Hilson, 2007.             |
| 4 | Lowellyne, 2011.               | 11 | Fig, 2003; Olaleye, 2010. |
| 5 | Kloppers and du Plessis, 2008. | 12 | Utting, 2003.             |
| 6 | Utting, 2003.                  | 13 | Whellams, 2007.           |
| 7 | UNCTAD, 2004.                  | 14 | Lungu and Mulenga, 2005.  |

# Capture, Management and Sharing of Mineral Revenue

# 7

CHAPTER

*“Obtaining an adequate share of mineral revenue and utilizing it in an equitable manner is crucial. An efficient and transparent fiscal regime should catalyze social, physical and knowledge infrastructure development”*  
—The Africa Mining Vision

**THIS CHAPTER PRESENTS** perspectives on capturing, managing and sharing mineral revenue. It looks at the often conflicting objectives of mining companies and governments in resource-rich countries. It discusses various tax instruments available for the mineral sector, the need for fiscal policy to be linked to development options, the management of mineral revenue, and the equitable allocation of a portion of such revenue to communities close to or affected by mining projects.

## Capturing revenue

### Overview

One of the key challenges is that the profit-maximization and repatriation logic of private foreign investment is at odds with a nation’s desire to retain as much as it can of the revenue generated from the exploitation of its mineral assets. Governments are pulled in different directions in providing sufficient incentive for companies to invest in exploration, development and production while collecting adequate revenue for socio-economic development. A properly structured fiscal regime seeks to balance these objectives.

The consensus is that tax regimes for mining operations should be designed to apportion “rent” between the

investor and the country in which the minerals are located. The investor must be compensated through a rate of return for investment risk, and the host government must be compensated for the exploitation of non-renewable resources. Some reward is due to the host country once its minerals are extracted and sold, regardless of whether the seller reports a profit (though the potential adverse effects of high upfront payments on developing and operating mining projects need to be considered, too). Any income above the return on investment should be shared between the investor and the host government.



Mining rights can be viewed in a similar manner to public-private partnerships (PPPs), but unlike PPPs for infrastructure and agriculture—where the state is expected to receive an improved asset at the end of the concession—in mining the state generally gets back an exhausted and possibly dangerous asset at the expiry of a mining right—perhaps a hole in the ground or even a tailings dump. This increases pressures on governments to maximize fiscal and economic benefits while the asset is productive. Exigencies of sustainable development make further demands that the mineral asset generate material benefit for the future generations that are deprived of it—so-called intergenerational equity—which introduces accountability issues on how much wealth mineral assets generate and how this wealth should be distributed.

The adequacy of revenue obtained by African governments from mineral exploitation is a subject of controversy. No precise or uncontested measure for determining adequacy exists. But the widespread sense that Africa has not obtained commensurate compensation from exploitation of its mineral resources is impossible to ignore. This

sentiment has become particularly pronounced since the early years (2002–2007) of the current mineral commodity price boom, which has substantially lifted profits for mining companies.

Yet few of these high profits have translated into increased or commensurate benefits for African mineral nations and their local communities. The benefits to governments were contained by the generous mineral policy regimes of most countries, resulting from the reforms of the 1980s and 1990s. These had often been prescribed by the World Bank (see chapter 2).

A critical feature of most of these regimes is that the tax burden over the useful life of mining assets is distributed in such a way that little tax is paid until the invested capital has been recovered. This postpones tax payments and during periods of boom prices, the benefits accrue mainly to the investor. This inevitably accentuates the impression of inequity in the distribution of such benefits and has contributed to widespread dissatisfaction.

### Mineral revenue and tax instruments

Otto and Cordes (2002), Otto et al. (2006) and Daniel et al. (2010) are among works that have discussed mineral taxation in great detail, and raise issues important to tax policy. These include the mix of direct and indirect taxes, the types and levels of taxes, the maximization of

government revenue in the short and long run, tax incentives available for achieving specific policy objectives and tax-stability systems (including reinvestment incentives as well as foreign exchange considerations) (box 7.1).



**Box 7.1****Some mineral taxes****Direct tax instruments**

- Corporate income tax (plus withholding tax)
- Progressive profit taxes (such as South Africa's formula tax on gold)
- Resource rent taxes
- Windfall profit tax, additional profit tax, super-profit tax

**Indirect tax instruments**

- Royalties ad valorem, specific/production volume
- Import duties
- Export taxes
- Value-added tax (VAT)/goods and services tax (GST)
- Labour levies (skills, unemployment)

**Other imposts**

- Competitive bonus bidding, auctions (as for hydrocarbons)
- Surface fees
- Licence fees
- Production-sharing contracts
- State equity participation

Corporate income tax is a typical and broadly applicable impost not unique to mining. The general issues are the rate of tax, the allowable deductions from gross income and the extent to which losses are carried forward (or even back). Capital allowances are a mechanism by which policy seeks to influence the pattern of expenditure of a mining project. The treatment of environmental and social expenses—particularly those for current environmental management, disaster mitigation and funding for mine closure—requires careful consideration. For example, the creation of environmental or social funds into which companies contribute has become common in mining regimes, but whether expenditure on these activities should be permitted as a deduction from gross income has become an issue. The other deductible costs for calculating taxable income have to be addressed.

Determining the level of revenue from mineral sales can be a challenge. Many economically important minerals have a published price and for those it is relatively easy to determine the appropriate sales revenue. Even with no published price, it is often possible to find a reference price to determine mining company income. For instance, the price of aluminium is often used as a reference for determining sales prices for bauxite and alumina. Controversy can, however, arise over the proper valuation of

by-products, depending partly on how easily they can be separated from the main value minerals. Particularly where the mineral is supplied to project sponsors, shareholders or other related entities, it is necessary to prevent transfer pricing, that is, to ensure that the valuation of the mineral produced is transparent and at an arms-length competitive price. The agreements relating to production and sale must therefore include the price references to be used in determining revenue.

Royalties are the principal means for ensuring that the country obtains some minimum value of the mineral produced<sup>1</sup>. These may be imposed as an amount per unit of production; at a rate based on the value of the mineral sold; or, less commonly, on the basis of the profits from, or the profitability of, the mining operation. Royalties also have the advantage of being relatively easy to determine and collect, and thus impose less demand on the sophistication of the government's tax authorities. Royalties are generally applicable on the value of the minerals at mine-gate, to compensate the state for the loss of a non-replenishable resource, whether a profit is made or not. If royalty rates are set too high, however, they can sterilize marginal deposits as they are effectively a working cost (see just below).

Resource rent tax (RRT) mechanisms seek to implement the basic concept of rent apportionment and are imposed on the profit of the project or company after deduction of a “normal” rate of return on capital. Some in the mining investment community oppose them, as illustrated by the vociferous opposition, mainly by mining companies, to recent proposals for a super profits tax in Australia. Still, it is generally recognized that an RRT has the advantage of being neutral in its impact on investment. Thus unlike other taxes, it causes no distortion to incentives.

The basic elements of RRT schemes are:

- The threshold rate of return after which the tax should be imposed.
- The rate of tax to be imposed.
- Whether the impost should be ring fenced on each project or on a group of projects by the same investor.
- What deductions should be allowed from income for tax purposes.

Land (2010) provides a recent discussion on RRT in the minerals industry. A possible way of getting around the difficulty of determining a specific rate, described by Land, is to link it to the long-term yield on bonds issued by the host country, especially since this can be expected to incorporate country risk<sup>2</sup>. The basic approach is to determine the threshold rate of return at which the RRT would be triggered by analogy with the interest rate payable by the country on commercial long-term debt plus a margin to compensate for additional risks involved in mining projects. As for the rate of the RRT, Land (2010) provides rates from 10 per cent to 70 per cent (though the highest rate, for Papua New Guinea, no longer applies).

RRT is one of the least distortionary of the usual mineral tax instruments because it does not sterilize resources, as high mineral royalties could. Marginal deposits would never breach the RRT threshold and therefore a high RRT rate would not impact negatively on investment decisions for such a deposit.

**Table 7.1**

**Resource rent taxes in Africa**

Country	Sector	Year	Type
Ghana	Hydrocarbons	1984	Contractual
Tanzania	Hydrocarbons	1984	Contractual
Ghana	Minerals	1985–2003	Law
Madagascar	Hydrocarbons and minerals	1980s	Law
Namibia	Hydrocarbons	1993	Law
Zimbabwe	Minerals	1994	Law
Angola	Hydrocarbons	1990s	Contractual
Malawi	Minerals	2006	Law
Liberia	Minerals	2008	Law

Source: Land, 2010.

RRT has a reputation for administrative complexity, which may weigh against it, but it has largely the same information and audit requirements as conventional income taxation. The main differences are:

- A project ring-fence basis is used for assessment (typically only relaxed for exploration expenses) even though ring-fencing is not unique to RRT.
- A cumulative, rather than annual income, basis of assessment is used. Although mainly a computational issue, there may be issues over prior-year records.
- The use of cash flow, rather than an accounting approach, excludes non-cash charges like depreciation.

RRT does not safeguard against tax leaks such as transfer pricing, thin capitalization or spurious allocation of overheads and, in this sense, is no different from other kinds of profits taxation.

Transfer pricing of production in particular has attracted attention, but transfer pricing of inputs and equipment constitutes a complex problem for governments and one harder for them to handle. Prices are often less transparent and tax evasion may take place through the use of non-arms-length suppliers based in tax havens. Debt service to institutions linked to the investor can cause similar problems. In this connection, the G20, the Organisation for Economic Co-operation and Development and the European Union are all clamping down on tax havens, work that deserves support from African governments.

Taxes on dividends and state equity participation are also features of many fiscal regimes. Duties on imported

inputs, particularly those used during exploration or mine development phases, tend to be limited, if imposed at all. Unless properly monitored, this approach can prevent local supply systems from developing, where economically viable, and hence deny the country the benefits of enhanced local linkages (discussed further in chapter 8). In some jurisdictions, the local government system prescribes property rates payable to the local authority for land and structures. Depending on how these are valued and the rate of tax, they can yield substantial revenue from the assets of large-scale mining operations.

African states should consider imposing a capital gains tax on any mineral property sold before mining operations begin. Even if statutes have provisions for capital gains tax, enforcement—when companies dispose of their assets and leave the country—imposes challenges that can be addressed by requiring companies to settle tax obligations as a pre-requisite for any transfer of their mining rights.

## Tax stabilization

Experience as well as prudence point to the importance of focusing not only on particular elements but also on the overall tax package in mineral projects. In many large-scale projects in Africa, sponsors and their lenders have sought and obtained assurances that there would be no additions to the total tax package agreed to initially. During the recent period of high prices and profits, however, existing tax regimes have not earned African mining countries a commensurate share of the large additional profits. The pressure on governments to impose additional taxes, in spite of such stabilization clauses, has sometimes proved irresistible, reinforcing the argument to develop

fiscal regimes that uphold equity during boom and bust—characteristics of the mineral commodity price cycle.

Stability clauses facilitate capital raising for large projects, but they are often unnecessarily extensive. One factor in determining their duration should be the period required for repaying the initial loans to the project from outside lenders, if any. Such clauses, inserted with others requiring most favoured tax treatment for the beneficiary company, risk causing unforeseen losses to government revenue if the authorities grant similar concessions to later entrants.

## Optimizing mineral revenue and linkages through price discovery

One of the most important elements of a mineral regime that attempts to optimize the development impact is setting a fair market value of resources—“price discovery”. Transparent and competitive concessioning of known mineral assets can help. Auctioning prospective hydrocarbon blocks is common in the petroleum industry but rare for “solid” minerals. Public tender will clearly have sub-optimal results for terrain with no known assets or areas of low prospectivity. Many new mineral developments in

Africa over the last decade have, though, involved known deposits or old workings, and many of these concessions were given to investors under discretionary allocation rather than via public tender. Even with a public tender, the selection of mining companies was often based primarily on bidders’ financial and technical capability to realize the project. This contrasts with a bid price that seeks to include an initial bonus or use of other instruments to maximize both revenue and other development benefits.

The Africa Mining Vision seeks to create an efficient and transparent fiscal regime that catalyses social, physical and knowledge infrastructure. African mining countries will need to explore more transparent and competitive concessioning systems, especially for disposing of known mineral assets. Such a system could attempt to maximize the development impacts of mineral assets through the inclusion of various linkages in the bids:

- Fiscal elements—maximizing state revenue through a combination of the signature bonus (up-front tendered payment), corporate tax, dividend withholding tax, the royalty rate, and the RRT or the percentage free carried state interest.
- Infrastructure linkages—which include possibilities for PPPs in infrastructure coupled with bidding up the proportion of open access capacity available to third parties to encourage collateral use of infrastructure by other economic and social sectors at non-discriminatory tariffs.
- Backward linkages—bidding on local content as a share of total purchases or inputs expressed in nominal milestones, such as production periods of 5, 10, 15 or 20 years.
- Forward linkages—the degree of value added locally before export, supported by a suitable set of government incentives.
- Knowledge linkages—bidding on annual contributions to local technical human resource development, research and development and technology-development initiatives.

One caveat to this approach is that the greater the variety of elements on which bids are to be evaluated, the more complicated the scheme and the greater the implementation challenges.

## Managing revenue

### Revenue impacts

Revenue from mineral operations offers governments, among other things, the financial resources to fund physical and social infrastructure, including human capital. A persistent concern, however, is the potential impact of large revenue from the extractive sectors on other parts of the economy. The main risk is that the inflow of revenue from mining, whether to the public or private sector, results in real exchange rate appreciation, which tends to undermine the competitiveness of other sectors exposed to international competition—“called the Dutch disease”. In addition, a dominant natural resource export sector can destabilize a nation's socio-economic system, especially in countries with non-democratic political institutions.

Various prescriptions are at hand for prudently managing the mineral sector, including appropriate savings strategies, inflation targeting and exchange rate management,

and striving for “a steady path of growth of public expenditure that does not accelerate beyond the capacity of the economy to deliver”.<sup>3</sup> Steps include special offshore funds that ring-fence or constrain the use of additional revenue (through stabilization or sovereign funds) or laws setting government spending limits and restricting uses to which some of this revenue may be put.<sup>4</sup>

Given the limited domestic scope for backward and forward linkages, governments might consider creating regional development funds to invest in long-term economic physical and human infrastructure to bolster intraregional trade and economies of scale through larger markets. The New Growth Path adopted by South Africa in 2010 recommends creating an African Development Fund that will function as a sovereign wealth fund and invest in regional infrastructure.<sup>5</sup>

## Revenue transparency

Campaigning by civil society organizations in recent years has brought revenue transparency to the fore as an essential component to promote mineral wealth for socio-economic development. Its main elements include:

- A sound system for collecting, receiving and recording all public revenue obtained from the minerals industry.
- Mechanisms for obligatory, regular and open reporting, both of revenue received by public bodies and of payments made by each firm engaged in such operations to public institutions and officials.
- Credible processes and institutions to ensure accounting and auditing of revenue and payments.
- Channels for public participation, nationally and locally, in monitoring and enforcing the transparency obligations of public institutions, officials and companies.
- The Extractive Industries Transparency Initiative (box 7.2).

### Box 7.2

#### Extractive Industries Transparency Initiative

Launched by the British Prime Minister of the time, Tony Blair, in June 2003 to promote revenue transparency in the extractive industries, the Extractive Industries Transparency Initiative has become one of the main initiatives for enhancing revenue transparency.

Despite some criticisms, it provides an acceptable attempt to improve transparency. Twenty African countries have so far agreed to use it to enhance reporting and auditing of revenue from their petroleum and mineral resource ventures. The International Council on Mining and Metals, with 20 of the largest mining companies as members, supports it.

The depth to which these commitments are realized will depend on continuing engagement with, and scrutiny by, broad constituencies locally, nationally and internationally. Nigeria, for example, has developed a legal framework to support the Extractive Industries Transparency Initiative and make the process mandatory. The Initiative does not, however, yet cover the initial contracting stage, where much of the revenue leaks.

Implementation of the Extractive Industries Transparency Initiative needs to follow the following criteria:

- All material oil, gas and mining payments by companies to governments ("payments") and all material revenues received by governments from oil, gas and mining companies ("revenues") are regularly published for a wide audience in a publicly accessible, comprehensive and comprehensible manner.
- Where such audits do not already exist, payments and revenues are the subject of a credible, independent audit, applying international auditing standards.
- Payments and revenues are reconciled by a credible, independent administrator, applying international auditing standards and with publication of the administrator's opinion regarding that reconciliation including discrepancies, should any be identified.
- This approach is extended to all companies including state-owned enterprises.
- Civil society is actively engaged as a participant in the design, monitoring and evaluation of this process and contributes towards public debate.
- A public, financially sustainable work plan for the above is developed by the host government, with assistance from international financial institutions where required, including measurable targets, a timetable for implementation and assessment of potential capacity constraints.

Source: *Extractive Industries Transparency Initiative*, <http://eitransparency.org>.

## Sharing revenue among local communities

The discovery of an extractive resource invariably raises expectations among local communities that they stand to gain. To reduce the potential for conflict, governments at various levels need to develop clear guidelines for distributing the benefits and wealth between the central government and local authorities and communities. Property rates and other fees, for example, may be levied and collected directly by the local government. Some countries have introduced programmes for allocating portions of central government mineral revenue to institutions of local mining communities or, less commonly, to allow lower level governments to impose taxes. Such schemes often specify:

- The components of government revenue from which allocation is to be made, whether from royalties, corporate taxes, dividends, or a combination of any of them.
- The proportion to be allocated.
- The recipient of the funds, whether lower level governments or groups within the community, and their respective shares.
- How payments are to be made, whether directly by the central government revenue collectors or through another government agency or institution, either existing or to be created for the purpose.

Several countries in Asia and Latin America have revenue-sharing arrangements, but such arrangements are much less common in Africa. In Ghana the Mineral Development Fund, formed in 1993, provides a mechanism through which some mining royalties paid to the central government are distributed to local communities. Under the Fund, 9 per cent of such royalties goes to the local community to be shared by the district assembly (the local administrative unit) and the local traditional authorities. It also provides for funds to be made available, on application, for use on specific problems that can be shown to

result from mining. Still, it prompts complaints, such as the adequacy of the amounts received; delays in releasing funds; paucity of information for beneficiary institutions on the amounts paid by mining companies and to local institutions; lack of mechanisms for auditing traditional institutions' use of funds; and limited community input into decisions on the use of funds.

Sierra Leone established a Diamond Area Community Development Fund in 2001 into which 25 per cent of the 3 per cent diamond export taxes levied on artisanal diamonds is paid, used for developing diamond mining communities. In addition, the government's Gold and Diamond Office deposits 0.75 per cent of the export value in an account held by the Ministries of Mineral Resources and Local Government, from which resources are disbursed to chiefdoms and districts.

The fund has several aims: implement post-war transformation efforts, reclaim diamond areas that were overtaken by insurgents, enable communities to promote their own poverty agenda, provide basic services and infrastructure and reduce illegal artisanal mining through an incentive scheme that links the number of licences issued to the amount received by each chiefdom and district. There are formulas for calculating allocations to district councils and chiefdoms and these funds are only disbursed once specific development projects have been approved. Guidelines exist for approving projects.<sup>6</sup>

The International Council on Mining and Metals reviews experiences from programmes,<sup>7</sup> and finds that most governments regard minerals as part of a nation's natural endowment, implying the need for equitable distribution of benefits across the nation. It argues that, although local communities should receive compensation for the harm caused by mining, governments should not accord them unnecessary privileges, just because they are close to a national asset. Such privileges could ultimately lead to political dislocation and secessionism.

## Policy implications

The design of national fiscal policy frameworks for minerals has to be guided by national sustainable development objectives, at all levels. As articulated in the Africa Mining Vision, the focus should be on mining for growth, socio-economic development and poverty alleviation. Countries should have well-constructed and equitable revenue capture and management systems. They need to ensure that stakeholders understand them.

An efficient fiscal regime has to reconcile the expectations of investors and governments. The various tax instruments should be integrated into a package that is attractive for investors and that maximizes government rent capture. Self-adjusting instruments that cater for both vibrant and

stagnant global demand scenarios should be considered, such as RRTs or formula taxes (as in South Africa) that work on profitability rather than profit. Taxes that lead to sterilization of mineral deposits should be minimized or not used.

The effective use of mineral revenue in long-term physical and social infrastructure marks the prudent transformation of finite mineral capital into other forms of long-term capital—to ensure inter-generational equity—and is enhanced by transparency in collection, as well as in use. Systems that allocate part of the mineral revenue to communities near mining areas should be designed to ensure lasting benefits beyond the life of the mine.

## Endnotes

1. Otto et al. (2006) provide a comprehensive account of the different forms of mineral taxes.
2. One of the most controversial elements of the proposed Australian RRT was the threshold rate of return.
3. Daniel et al, 2010.
4. Bell and Maurea, 2007.
5. Government of South Africa, 2010.
6. Sierra Leone, 2008.
7. ICMM, 2009.



# Optimizing Mineral-based Linkages

## 8

### CHAPTER

*“For the mining sector to improve its contribution to broad based development, it must be better integrated into the national and regional economic fabric through linkages. To harness linkage opportunities, challenges such as those relating to deficiencies in human capital formation, particularly in knowledge intensive areas, as well as infrastructure inadequacies must be addressed”—*

*The Africa Mining Vision”*

**MINERAL ENDOWMENTS ARE** by nature finite, suffer long-term real price decline and are susceptible to cyclical fluctuations. They generally demand many skills and much capital to extract and process. They embody their own growth impetus which, if understood and managed, can be used to alter Africa’s debilitating economic position.

The Lagos Plan of Action for Economic Development of Africa, 1980–2000, observed that the failure of raw

material-exporting industries to integrate into the national economies of the member states impeded backward and forward linkages. (These and other terms are discussed in the next section.) The plan therefore called for “integrating natural resource development within national and African multi-national socio-economic development programmes and projects, so as to encourage complementarity of different natural resources available in various member states in the production process and to promote backward and forward linkages within the African economies”.<sup>1</sup> It also called for the “establishment or strengthening of national machinery for the creation of policies to ensure that proper backward and forward linkages exist between these resource sectors and other sectors of the economy in order to promote integrated rural development”.<sup>2</sup>

Examples of failed attempts across the continent over the years have caused some scepticism about the capacity of mining-related projects to catalyse growth and development. Recent thinking has once again, reawakened interest in linkages for economic development, including corridor development and clustering, to facilitate growth in depressed economic environments. This has been partly shaped by the experiences of resource-rich countries such as Canada, Finland, Norway, Sweden, the United States, and, to some extent, Australia, whose economies have evolved from a basis of primary extraction to ones characterized by highly skilled and knowledge-intensive manufactured exports.

In these countries, industrial development was based on continued exploitation of resources and increasing domestic value added from the formation of linkages with industries directly and indirectly associated with key mineral-based projects. Mining sites became centres of growth instead of enclaves, and agglomeration not only increased workforce productivity, but also raised incomes

among the local population and economic growth more widely. Of greater significance, it promoted a shift to a more dynamic and sustainable growth trajectory as secondary and tertiary industries, fostered early on in the evolutionary process, continued long after the minerals had been depleted.<sup>3</sup>

## Conceptualizing and quantifying mineral-based linkages

### Types of linkages

What does “linkage” mean in the minerals industry? The term is used in several branches of economics, such as input-output, economic-cluster and supply-chain analysis. Input-output analysis, which aims to describe the relationships between different economic sectors in a national or regional economy, uses the terms backward and forward linkages to signify sectors that respectively deliver to and take deliveries from a particular sector. It is used mainly to quantify the impact of changed output in one sector on the rest of the economy.

The analysis of clusters—groupings of enterprises that are related and that depend on each other—aims less to quantify and more to identify relationships that can be based on deliveries of physical products and on less tangible interactions, such as exchange of ideas. Cluster analysis is often applied at the same time as supply-chain analysis, which studies the production process as a sequence. Both use the terms upstream and downstream linkages (as well as sidestream linkages, a later addition).

Input-output analysis is a quantitative technique, but the other two are less focused on—and less amenable to—quantification of linkages.

In a business environment, linkages are used to define any commercial interaction between different profit-oriented enterprises that develop naturally in a well-functioning market economy. Linkages form as enterprises seek the most economical and efficient way of sourcing the skills, materials and services they need to produce a commercial output. In this way, linkages lift production, product diversification and specialization, as well as productivity. Most

business linkages are created through supply chains that comprise procurement, out-sourcing and sub-contracting of activities between large and smaller firms. Business linkages take various forms—informal and formal, direct and indirect. Formal arrangements include supply contracts, marketing and franchising of technology-licensing agreements, partnerships and joint ventures. Informal arrangements include collaboration in market information or technology-transfer networks.<sup>4</sup>

Setting up a gold, chrome, iron ore or diamond mine typically gives rise to two main groups of linkages. The first includes backward/upstream linkages (to the mine) and forward/downstream linkages (to beneficiaries or processors of the mine's output). The second includes sidestream linkages (to industries or organizations providing technological, human resource and infrastructure inputs) and lateral migration linkages (development of alternative uses of generic technologies used in the industry). (These ideas are expanded in the following sub-sections.)

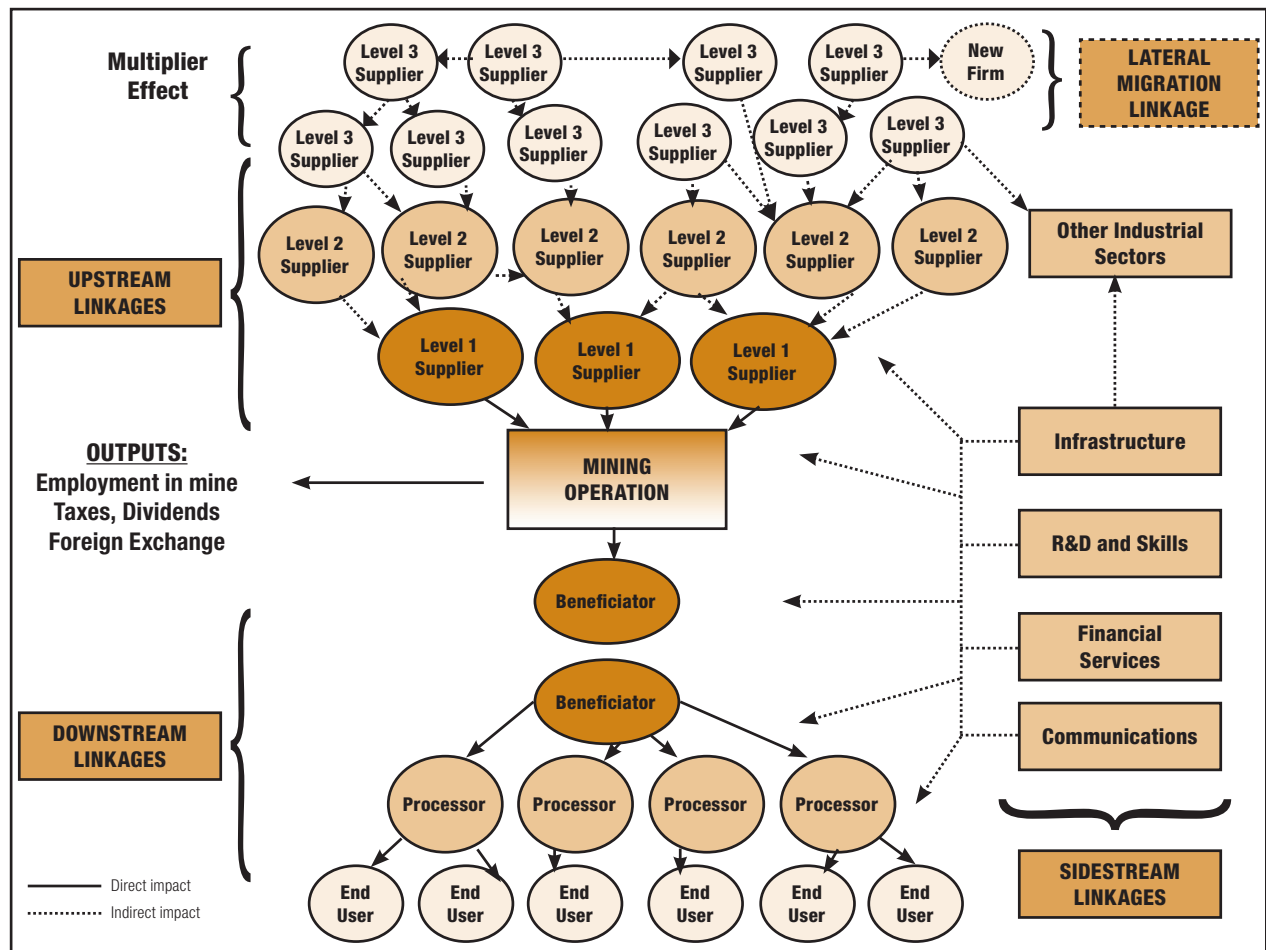
The sequencing, scale and depth of subsequent linkage development is influenced by a host of factors, notably size, type, location and scale of commodity mined; availability of supporting physical infrastructure; quality of local skills; corporate procurement practices; the legal environment; and degree of involvement on the part of the government and producer firms to drive the process.

Taken together, the various linkages form a system of individual parts that can operate and function independently of each other but achieve their full vibrancy through interaction and overlap (figure 8.1). Each participant in the

industry is connected to others, and the industry needs to be viewed as an integral system.

**Figure 8.1**

Linkages in the minerals industry and the relationship between firms



Source: Lydall, 2010.

### Upstream linkages

Collectively, upstream linkages refer to the various direct and indirect inter-firm relationships connecting an industry with its suppliers or supply chain. Upstream linkages are generally based on vertical, horizontal and technological demand–supply interactions among producer firms, specialized manufacturers, input providers, agents and distributors as well as service suppliers that evolve over the life of an operation.<sup>5</sup>

In the minerals industry, upstream linkages arise before a plant can be commissioned—as deposits are identified,

assayed and quantified; finance secured; legal and permitting issues addressed; plans for development and earthworks commissioned; and labour, raw materials equipment and utilities sourced. Upstream-linkage effects continue, albeit with different suppliers, once full production is reached. The depth of linkage development wanes once a mine is decommissioned and closes. Upstream linkages become more important as the complexity of extracting, processing and transporting mineral products increases, drawing in large amounts of construction machinery and equipment; manufacture of metal products;

vehicles; water, scientific and technical services; electricity; business services; and transport and communication services.<sup>6</sup>

The degree of local economic diversification also strongly depends on subsequent linkage development between the first level of suppliers supporting the mine directly and suppliers supporting them (see figure 8.1). As each of these suppliers expands, its dependence on other supplier firms grows. This process is continuous and the multiplier effect increases with each additional linkage.<sup>7</sup>

### Downstream linkages

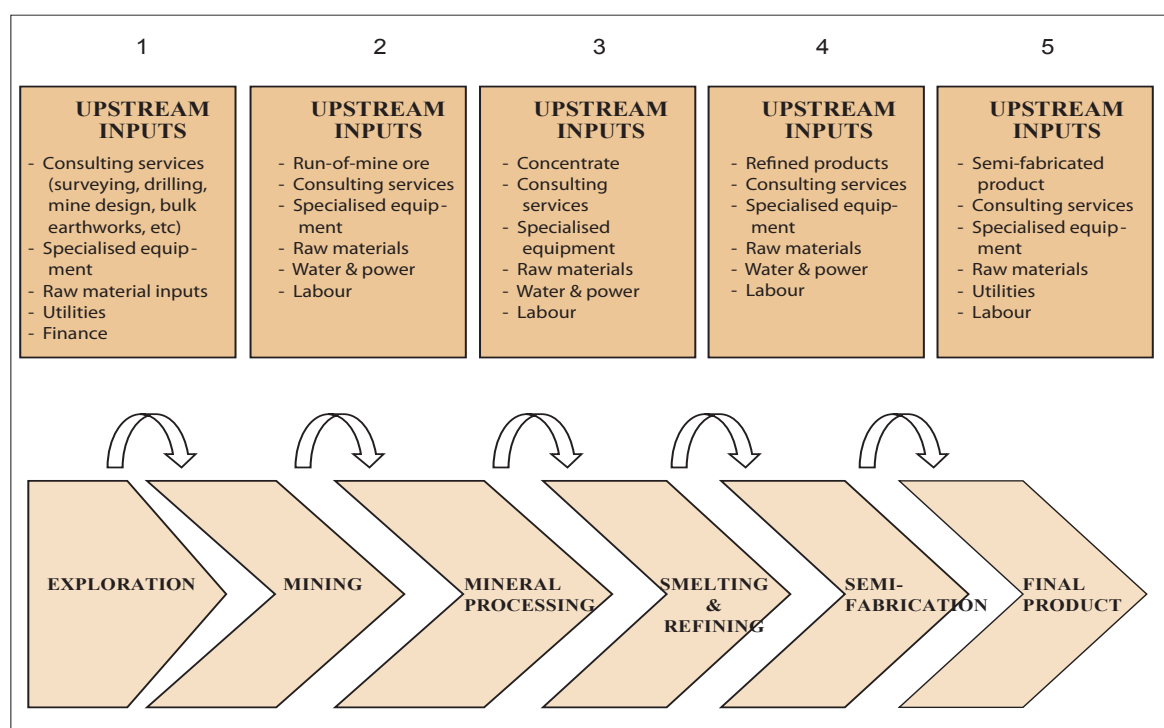
Nationally, downstream (or forward) linkages trace the interconnectedness of a sector to other sectors in the

regional economy that consume its output in the production process. A typical mineral value chain comprises six stages (figure 8.2): exploration, mining, mineral processing, smelting and refining, semi-fabrication and final product manufacture.

Run-of-mine ore is generally the principal output of the mining stage and forms the primary input into the mineral processing stage. The resultant concentrate is the key input into the smelting and refining stage. The refined product is then turned into semi-fabricated products and, at the end of the value chain, such outputs are consumed by a variety of different manufacturing/industrial sectors.

**Figure 8.2**

The main stages in the mineral value chain



Source: Lydall, 2010.

Coal, petroleum and gas are consumed in electricity generation. Refined petroleum products are used in manufacturing chemicals and chemical products. Metal ores and industrial minerals are consumed in the manufacture of basic metals and non-metallic mineral products, with each successive level of processing adding value.

A Southern African Development Community study evaluated the value chain for various minerals produced in the region.<sup>8</sup> The results showed that the value of the mineral or element (by weight) contained in downstream (including assembled) products relative to that in the first commonly saleable product for each element can reach

a factor of at least 400. For example, the unit value for copper in a motor is 117 times that contained in cathode copper, 38 times for iron in fabricated tanks and 6 times for platinum in auto-catalysts. The ratio can be as much as 173 times for gemstones in jewellery, and as high as 5,000 per carat in a polished diamond. Given these ratios, backward linkage development should aim at creating an integrated industrial platform of feedstock for components and, ultimately, original equipment manufacturers.<sup>9</sup>

Downstream linkages in Africa are often weak because mineral products are not consumed in the national economy, but exported in raw or partly processed form, in the absence of local manufacturing. Increased beneficiation may yield both national benefits (increased foreign exchange) and local benefits (higher wage incomes and local procurement). In addition, mineral-based intermediate and finished products do not usually suffer the same terms-of-trade decline and volatility as raw materials, and may therefore provide a more stable economic base.<sup>10</sup>

Yet raw minerals to hand do not automatically confer an advantage on the manufacturing beneficiation sectors—competitive advantage issues such as logistics, comparative production costs, skills and craftsmanship do. With precious minerals, the primary products are generally available in any of the world's markets at internationally determined prices, due to their high value-to-weight (or value-to-volume) ratio. The vast majority of beneficiation

(jewellery fabrication and diamond cutting) takes place in countries that have little or no mine production of precious minerals. The lower the value-to-weight (or value-to-volume) ratio, generally, the greater the locational advantage of the resource country, given the higher transport costs per unit weight (or volume) of material. Thus for bulk commodities, though prices are generally determined internationally, some processing takes place in the resource country but manufacturing often takes place near the market for the product (such as copper fittings).

The largest mineral-based feedstocks into the global economy are, for manufacturing, steel and polymers (from crude oil), for agriculture, nitrogen, phosphates and potassium and for infrastructure, cement, steel (rebars) and copper. Within the areas covered by Africa's various regional economic communities, resources for almost all these feedstocks are available. Hence the critical issues are twofold: producing them at internationally competitive prices at large economies of scale; and developing common regional markets by removing the barriers to intraregional trade, so creating large markets that can absorb a significant part of the expanded output.

Sub-optimally sized plants in Africa, which sell locally at monopoly prices, severely compromise the growth of downstream sectors and lead to trade diversion rather than trade creation. There are, of course, exceptions (box 8.1).

**Box 8.1****Morocco's phosphate industry**

With the world's largest reserves, Morocco is the largest exporter and the second-largest producer of phosphate, after the United States. The International Fertilizer Development Centre in 2010 put Morocco's share of global phosphate resources at 85 per cent.

The phosphate industry dominates mining, accounting for about 95 per cent of mineral production in 2009. The industry is run by a state company, Office chérifien des phosphates, responsible for managing and controlling all aspects of phosphate mining and beneficiation.

The country has a large downstream phosphate chemicals sector. The main products are phosphoric acid and phosphate-based fertilizers. Phosphoric acid in 2009 amounted to 2.8 million tonnes, for which India was the largest customer. Fertilizers amounted to 2.4 million tonnes. Morocco has several phosphate-based chemical plants with Maroc Phosphore II, at Safi, one of the largest phosphoric acid complexes in the world.<sup>1</sup> In 2008, Office chérifien des phosphates began a \$12 billion expansion plan that aims to double phosphate production by 2015.<sup>2</sup>

**Notes:**

1. <http://www.mbendi.com/indy/chem/af/mo/p0005.htm>.
2. Newman, 2009.

Minerals with largely local and regional potential have received less attention and investment than those for export. Yet replacing imports by locally sourced mineral products and facilitating the expansion of local and regional markets for these products would require as much attention as beneficiation for international markets. Linkages based on inputs to the national and regional economy (such as manufacturing, agriculture and construction) therefore need to be prioritized.

**Sidestream linkages**

Mining, by virtue of its scale and scope of activities, creates the critical mass needed to establish other areas such as financial services, power, logistics, communications, skills and technology development. The depth and extent of such side-stream linkages in the regional economy has a determining influence on subsequent upstream and downstream linkages, particularly further down the mineral value chain where inputs such as research and development (R&D), skills, technology and infrastructure increase in importance.

Side-stream linkage formation also underpins the viability of other sectors and unrelated industries in an economy. In Australia and Canada, for example, governments have

acknowledged the importance of these linkages, and supported their growth (chapter 10). Africa needs to do more along these lines.

Lateral migration linkages. Upstream, downstream and side-stream linkages are critical for unleashing sustained economic diversification in a mineral-rich country. But global experience shows that the real transition—from a primary-commodity exporter to a high-technology, knowledge-intensive industrial leader—requires developing the more dynamic linkages in each stage of the mineral beneficiation chain, which offer greater commercial rewards.<sup>11</sup> Mining should not only be seen as a source of export commodities (metals and minerals), but also as an engine for the development of its inputs industry (backward linkages) and the export of the industry's related services, namely capital goods and expertise in fields such as process control, construction equipment and materials-handling, all of which can be used in a wide number of economic sectors as well as mining.<sup>12</sup> Lateral migration linkages generally only emerge in advanced stages of industrial development. They also depend heavily on long-term investment in technical human resource development (training engineers, for example) and R&D.



## Quantifying mineral sector impacts

It is usually hard to quantify linkages, and quantitative comparisons among countries or mining operations can be misleading. One of the reasons has to do with classification of activities. In some countries and branches of the industry (bauxite mining in Australia is a prime example), a significant part of the production process is outsourced to construction companies and is registered as a construction activity in the national accounts. The same type of classification difficulty complicates analysis at the micro level of individual operations, as well as comparisons between them.

Mining companies outsource work to different extents. A company that outsources little raises employment levels and value added of the mining industry in statistics but appears to have few linkages to the rest of the economy. In contrast, a company with similar production volumes and technology that outsources as much as possible makes only a small contribution to employment and GDP in the national accounts, but will appear to have very strong linkages to other sectors.

## Changing perspectives on mineral-based linkages in Africa

Most of the current African mining regimes were introduced in the 1980s and 1990s during a period of stagnant global demand. Governments were concerned, among other things, that heavy demands on investors to build linkages could deter scarce mining investment. With, however, the global supply–demand pendulum swinging far the other way, African governments urgently need to revise their regimes to make resource exploitation conditional on investors maximizing development impacts.

African ministers have already stressed “...the need for greater local beneficiation of Africa’s mineral resources and the enhancement of its industrial base through mineral sector upstream, downstream and sidestream linkages”, calling for an improvement in “... mineral resource policies, legal, regulatory and administrative frameworks and enhancement of [Africa’s] industrial base through mineral resource exploitation regimes; and for developing the linkages of the mineral sector with the domestic economy”.<sup>13</sup>

Jourdan (2010) goes further and suggests that Africa should leave its mineral assets in the ground (for exploitation at

a later date) if the linkages cannot be built. He makes this recommendation based on the view that if foreign capital—through trans-national corporations—exploits the assets, market forces are unlikely to naturally establish the linkages because the trans-national corporations already have their global linkages to optimize returns. The evidence of mining in Africa over the last 50 years appears to support this contention. Even so, he argues that the disadvantages of foreign capital can be eliminated or mitigated through state strategies that oblige or incentivize trans-national corporations to realize local linkages.

African governments have seldom stimulated linkages through structured interventions, but one success is Mozal in Mozambique (box 8.2). While based on hydro-electric rather than mineral resources, the government recognized the dangers of using a capital-intensive single-site project to drive development. From the start the project heavily emphasized building linkages.



**Box 8.2****Mozal, Mozambique**

Mozambique emerged from its protracted civil war one of the poorest countries in the world. The Mozal aluminium smelter in the south was the first major development in the country for decades and was made possible by private investment from international players, facilitation from the government and regional support from the South African Government.<sup>1</sup>

It began operations in 1999. From the outset a local enterprise development programme—Mozlink—was involved in the project, run by the International Finance Corporation and Mozal with the Investment Promotion Centre of Mozambique. Mozlink had evolved out a programme to train and mentor local small and medium enterprises in mining to bid for win and perform construction contracts following Mozal standards. That success promoted the formation of Mozlink to provide technical and managerial assistance to upgrade the capacity of local mining SME suppliers to participate in Mozal's supply chain for goods and services, thus strengthening local supply chains. By 2007, Mozlink had built capacity of 45 local small and medium enterprises. In addition, monthly spending on 250 local firms supporting Mozal increased to \$17 million. Small and medium enterprise performance as measured by quality management, maintenance and safety improved by 20 per cent.<sup>2</sup>

Indirect spillovers fostered by Mozlink included the Mozambique Organisation for Quality to promote and train Mozambican domestic companies in international health, safety, quality and environmental standards; the Mozambican Business Network to encourage interaction with small and medium mining enterprises; and a three-year programme (with backing from the International Finance Corporation and large foreign investors) to get local small and medium enterprises more involved in procurement programmes for mining, natural gas and other industrial areas.<sup>3</sup>

Side-stream linkages from the smelter included an improved power grid, a large-scale water supply network, housing, better roads, a finger jetty to load products directly onto ocean-bound liners, a highway connecting the port of Maputo to South Africa, and overall improvements in investor confidence, which prompted them to consider setting up a heavy mineral sands operation (Corridor Sands).<sup>4</sup>

**Notes:**

1. UNECA, 2004.
2. Jaspers and Mehta, 2007.
3. Jaspers and Mehta, 2007.
4. UNECA, 2004; Sandenbergh et al., 2009.

## Constraints to developing linkages continent-wide

African countries have diverse development experiences, mineral endowments and economic needs, yet share common impediments that prevent mineral-based linkages from developing. The most notable are inadequate capture and management of resource rents (see chapter 7); poor

resource infrastructure; trade barriers and regional market constraints; inhibitors to downstream value addition; failure to secure upstream linkages; and human resources (which are now discussed).

## Poor resource infrastructure

Infrastructure is a determining factor in industrialization. It directly affects the degree of agglomeration of upstream and downstream industries associated with a particular mining operation, while influencing the growth of other economic sectors with similar requirements.

Sub-Saharan Africa's infrastructure is inadequate, fragmented and expensive, even compared with that in other low-income regions (table 8.1). Power supply and roads are principal areas of deficiency.<sup>14</sup>

**Table 8.1**

### Infrastructure deficits

Normalized units	Sub-Saharan Africa	Other regions
Paved road density (kilometres per square kilometre)	31	134
Total road density (kilometres per square kilometre)	137	211
Telephone mainline density (lines per 1,000 population)	10	78
Mobile density (lines per 1,000 population)	55	76
Internet density (lines per 1,000 population)	2	3
Generation capacity (megawatts per 1 million population)	37	326
Electricity coverage (percentage of population)	16	41
Improved water (percentage of population)	60	72
Improved sanitation (percentage of population)	34	51

Source: Yepes *et al.*, 2009.

Africa has 15 landlocked states, and many of the railway lines they use have been damaged or destroyed in civil war, rendering the logistics of global trade extremely difficult. Distance from port raises average freight costs, effectively reducing available funding for re-investment. Tumafor (2009) shows that Africa's logistical costs are around 250 per cent of the global average, thus many African states' resources remain stranded, as individual projects cannot alone carry the necessary infrastructure costs. Limão and Venables (2001) maintain that a deterioration of infrastructure from the medium to the 75th percentile raises transport costs by 12 percentage points and reduces trade volumes by 28 per cent.

## Constraints to trade

Constraints to trade are a major impediment to growth in many African countries. Where the trade environment is more favourable, businesses are better positioned to take advantage of new opportunities, grow and create jobs. According to the World Bank's Doing Business 2010 report, manufacturing enterprises in Africa have difficulty exporting because of poor customs administration and

In Africa, poor infrastructure accounts for 40 per cent of transport costs for coastal countries, and up to 60 per cent for landlocked countries. High trade costs undermine producers' competitiveness and lower consumer welfare because imported inputs and final goods are made more expensive.<sup>15</sup> Landlocked countries are further disadvantaged by having to rely on political stability and good institutional structures in transit countries.<sup>16</sup>

However, although poor infrastructure poses a constraint to the realization of the linkages, Africa's mineral endowment could be used to provide major trunk infrastructure for the development of other sectors.

restrictive trade and customs regulations.<sup>17</sup> Although much attention is paid to tariff reduction, improved customs processes and trade logistics would greatly benefit African exporters. According to the OECD (2009), reducing delays at borders by 6.3 per cent, or the number of documents required for trading by 11 per cent, could increase trade flows in Africa by 10 per cent.

## Inhibitors to downstream value addition

Factors in poor downstream linkage development include lack of large economies of scale to remain competitive in many beneficiation processes; the strategies of multi-national beneficiators (with capacity elsewhere); and the inability of local firms to penetrate established global value chains (as well as infrastructure and trade constraints).

The growing excess capacity at the smelting and refining stage for most base metals, relative to the mining stage, has depressed smelting charges. Copper smelting and refining charges have fallen from over 30 per cent to less than 10 per cent of the refined copper price over the last decade, reducing the overall profitability of smelters and refineries. Ironically, the excess capacity partly stems from government incentives to promote further processing.

Base and precious metals are easily marketed up to the stage of semi-fabricated products. In the absence of established commercial networks, production can be sold on commodity exchanges. The situation is more complicated for products with a wider and non-standardized range of quality differences, such as many industrial minerals.

## Impediments to securing upstream inputs

The main difficulties arise from centralized purchasing strategies of most resource extraction multi-nationals and the lack of a domestic business sector with the requisite capacity and access to capital to take up these opportunities. As well as a shortage of basic local human resources, technological expertise to establish these industries is lacking. In addition, lower freight prices, more efficient logistics and trade liberalization have exposed most input markets to international competition.

The weak development of pan-African markets for industrial goods and services has restricted the emergence

Most multi-national firms producing such minerals are closely integrated with users of their products and these relationships have been built over many years. The costs of switching to a new supplier are very high and carry considerable technical risks and companies therefore try to avoid them.

Some multi-nationals prefer to send crude resources to a central beneficiation facility in another country, or have a policy of keeping to their “core competence” of resource extraction, and then—if they have a monopoly or oligopoly position in the country—only make the semi-processed resource available to the local market at a monopoly price (import parity). Addressing this may require minimum levels of beneficiation in the mineral extraction agreement, or an effective competition authority or regulator.<sup>18</sup> Other measures include requirements on mineral companies to make their output available to local companies at free on board or export parity prices, or to sell a certain proportion of their production on national or regional markets (the latter would also set a representative reference price).

of home-grown, innovative firms. African firms need to deepen their consumer orientation to promote formation of second- and third-level upstream linkages.<sup>19</sup>

Stipulating (and enforcing) minimum local content requirements in contracts or licences can help to overcome the difficulties, though this strategy carries risks of encouraging rent seeking unless it is carefully structured. Investing in appropriate basic and technological education may be costly and usually yields results only in the long term, but results tend to be more sustainable.

## Human resource deficiencies

According to the World Bank (2009), education in Sub-Saharan Africa is poorer than in other regions. The mineral industry alone cannot change this situation, but selective actions by both the private and public sector to

build sustainable capacity in geology, mining, minerals processing and extractive metallurgy—to help to localize the industry—would work to develop linkages. South Africa is a success with a strong cluster of specialized

goods and service industries as well as established tertiary institutions and programmes geared to transferring and improving skills in the sector. Still, even South Africa's

training at tertiary level is far too low to sustain strong local growth, given the competition for skills internationally.<sup>20</sup>

## Spatial linkages

Sandenbergh et al. (2009) discuss examples of the synergistic relationship between bulk mining and infrastructure development leading to significant economic advantages in Africa. Examples include the phosphate industry of Morocco (see box 8.1) as well as the iron-ore industry in Mauritania and the manganese industry in Gabon (box 8.3). They also show that building transport and energy infrastructure, linked to bulk mining operations, can have significant direct and indirect economic impacts, including jobs and foreign exchange. Such construction can also lead to upstream linkages to other bulk commodities often sourced internally, such as aggregate, sand and limestone, and can expand the potential for downstream processing.<sup>21</sup>

Fauconnier (2004) maintains that opportunities abound in Africa for using infrastructure to foster mineral-based linkages. Strong global mineral demand has increased the viability of many inland deposits, overcoming the high infrastructure capital expenditure (of as much as 70–80 per cent of total capital expenditure on new iron-ore mines). Surging demand could provide the “anchors” for the integrated development of the surrounding stranded potential in other sectors (such as agriculture, forestry and tourism), using a resource or development corridor approach to optimize these spatial linkages provided by the anchor project infrastructure, as in southern Africa through spatial development initiatives.

**Box 8.3****Mauritanian iron ore and Gabonese manganese industries****Mauritania**

Mauritania has extensive iron-ore deposits and has been a major iron-ore producer and exporter for about half a century. Production started in 1963 and by 1966 more than \$200 million had been invested in mining, port infrastructure and a dedicated rail line to carry the ore 650 kilometres to the port. By the mid-1970s iron-ore operations had large direct and indirect impacts on the economy, accounting for about 25 per cent of GDP due to the high consumption of utilities (power and water) and links to the transport and service sectors. At the time, iron-ore mining provided nearly 30 per cent of all government revenue.<sup>1</sup>

Mauritania is the world's seventh-largest exporter of iron ore. Production is largely controlled by the state company, which produces about 12 billion tonnes of ore a year. The company is developing a \$700 million Guelb II project, expected to add approximately 4 million tonnes to annual output.<sup>2</sup> Reports suggest plans to "double production following extensions to the iron-ore infrastructure and the second installation of the mineral port".<sup>3</sup>

**Gabon**

In 2009, Gabon was the seventh-biggest producer of manganese, with about 8 per cent of world production. Comilog is the producer (67 per cent owned by Eramet of France and 25 per cent by the government) at an open pit at Moanda. The pit has an annual capacity of 4 million tonnes of ore. Exports are mainly to China.

Comilog has begun building the Moanda Metallurgical Complex, at the Moanda mine.<sup>4</sup> It will include a metal production plant with capacity of 20,000 tonnes a year of manganese metal and 65,000 tonnes a year of silico-manganese metal. The complex is to benefit from the construction of the Poubara hydroelectric power plant, a government project to improve national power supply. Moanda Metallurgical Complex is scheduled to start production in late 2012 or early 2013. The company has reported that improvements to the Trans-Gabon railway, in which Comilog holds a 75 per cent stake, were on target.<sup>5</sup>

**Notes:**

1. Handloff, 1988.

2. <http://www.reuters.com/article/2010/02/26/mauritania-mining-production-idUSLDE61P1PH20100226>.

3. Mauritanides 2010, [www.mauritanides2010.com/](http://www.mauritanides2010.com/).

4. <http://minerals.usgs.gov/minerals/pubs/country/2009/myb3-2009-gb.pdf>

5. Bermudez-Lugo, 2009.

**Policy implications**

Although mineral resources are a finite source of comparative advantage, global evidence shows that they can catalyse long-term sustained growth and development only if they are managed and supported appropriately. The right policies and strategies are critical to leveraging the

development impacts which the extraction and processing naturally generate and which policy planners often overlook. The main aspects encompass linkages upstream, downstream, side-stream and laterally from a particular mining operation. The key drivers for these include a

significant entrepreneurial base that can service local, regional and export markets; competitive production (high productivity and low costs relative to competitors’); craftsmanship and specific skills; access to markets (domestic and foreign); good market intelligence; low costs of doing business; low material funding costs; special economic zones; quality assurance; and R&D.<sup>22</sup>

Africa is in the unique position of collectively possessing all the necessary minerals for industrialization. The next steps entail getting the basics right—using revenue from the sale of mineral resources to set a foundation on which linkage effects can manifest themselves and multiply. Collective emphasis needs to be placed on harnessing opportunities and minimizing weaknesses. Four critical issues need to be addressed: human capital constraints; weak innovation capacity among firms; low exports; and firms’ poor competitiveness, particularly due to poor infrastructure and public services.

Policy reforms can be summarized as follows.

***More consciously and consistently integrating mineral policy into development policy.*** This involves a shift away from the traditional (practically exclusive) focus on mineral extraction.

***Enhancing primary sector integration into the broader economy.*** Building backward and forward linkages requires complementary strategies, primarily creating the business environment and public sector institutions that foster growth. Second is—as far as governments can—setting terms on access to mineral resources that both impose linkage conditions on mineral rights holders and provide incentives for investors to structure projects in ways that deepen the integration of mineral projects into the broader national and regional economy. Reasonable national local content and value-addition milestones need to be incorporated in mining regimes.

***Promoting mineral beneficiation before export.*** The pursuit of downstream processing of minerals before export should not be placed at the top of the national agenda for the minerals industry in isolation. Beneficiation contributes to growth and diversification only when it generates above-average upstream and side-stream linkages, and

should not be pursued merely because a country is endowed with mineral resources. Although some countries have used export taxes to promote downstream processing, experience is mixed and such taxes need to be applied judiciously, possibly only after an independent study has indicated that investment in the next value-addition step is feasible. (New trade agreements, particularly the Economic Partnership Agreements with the European Union, are likely to complicate use of this instrument—chapter 9.)

***Directing attention to developing upstream capital goods and service industries.*** This is critical for employment generation and for generating new products and processes.

***Enhancing local linkage development through local participation and empowerment models.*** Many benefits can flow from local participation and empowerment models.

***Extending economic infrastructure.*** Funding and driving the establishment of economic infrastructure, particularly power and transport, is critical in prudent mineral development.<sup>23</sup> Policymakers need to maximize the beneficial spillover effects of infrastructure triggered by mining through resource corridors. Planning needs to explore the collateral or integral use by other economic sectors. Mineral infrastructure needs to allow third-party access at non-discriminatory tariffs. Expanded infrastructure will also promote rural development.

***Developing human resources and fostering innovation.*** Effort needs to be directed to expand higher technical skills required by the minerals industry. Public support is required for innovation in fields related to natural resource exploitation through national innovation systems, such as tax incentivization of local R&D and technical human resource development, as well as the allocation of some resource rents to developing technological linkages.

***Pushing regional integration.*** The gradual movement towards regional integration would go some way in overcoming barriers to establishing linkages, through creating regional common markets (customs unions). African governments need to dismantle the numerous impediments to intraregional trade in order to realize the larger regional markets and to overcome the high barriers to entry that are related to poor economies of scale for many mineral

backward and forward linkage opportunities (discussed further in chapter 9). In order to soften currency appreciation (Dutch Disease) and to access regional markets, South Africa's New Growth Path<sup>24</sup> has mooted creating an African Development Fund to invest in regional infrastructure and so stimulate intraregional trade and investment. (See also, Jourdan, 2010, for a proposal for an African regional development fund to support long-term regional physical and knowledge infrastructure).

In conclusion, successful linkage development relies on simultaneous multi-factor promotion: skills, savings, business performance, governance, pricing, policy making and

implementation capacity. It is also premised on maximizing the development impact of a resource endowment by optimizing potential investor market interest in realizing wide-ranging linkages, given the demand for specific resources at a given time.

Most important, given the cross-cutting nature of the issues that have to be resolved to promote linkage development, an integrated sectoral and spatial strategic approach is fundamental. Not only do all stakeholders have to work together (labour, business and government), but multiple government departments and agencies need to play constructive roles, nationally and regionally.

## Endnotes

1. African Union Commission, 1980: para. 77.
2. African Union Commission, 1980: 172.
3. Aroca, 2001; Walker and Jourdan, 2003; Wright and Czelusta, 2003.
4. Stanton and Polatajko, 2001.
5. Lydall, 2009.
6. Aroca, 2001; San Cristobal and Biezma, 2006.
7. Walker, 2001.
8. SADC, 2000.
9. Walker and Jourdan, 2003; Baxter, 2009.
10. Walker and Jourdan, 2003.
11. Walker, 2001.
12. Walker and Jourdan, 2003; Walker and Minnitt, 2006.
13. AUC, 2008.
14. Yepes et al., 2009; Eberhard et al., 2008; and Foster, 2008.
15. Limão and Venables, 2001; Lahti, 2007; Eifert et al., 2008; Sandenbergh et al., 2009.
16. Portugal-Perez and Wilson, 2008.
17. World Bank, 2009.
18. Sandenbergh et al., 2009.
19. Lahti, 2007.
20. Walker and Minnitt, 2006; Sandenbergh et al., 2009.
21. Bermudez-Lugo (2009).
22. Baxter, 2009.
23. Additionally, information and communications technology systems, bulk water and waste-treatment plants, housing, airports, education and training centres, and retail outlets all help to realize long-term sustainable agglomeration effects.
24. Government of South Africa, 2010.



# International Trade and Investment Issues

# 9

## CHAPTER

*“As a knowledge-driven, vibrant and competitive mining sector is crucial for Africa, it is important to be fully aware of existing international trade and investment regimes for mineral resources and the implications of specific provisions of any treaties signed as many of these treaties retard the development of a value added African mineral sector”—The Africa Mining Vision*

**HISTORY AND THE** experience of other, now industrialized, countries show that the international trade and investment regimes as well as domestic trade, investment and industrial policies are critical in the transition and development of domestically owned industrial firms. Most African countries have indeed in the past two decades carried out far-reaching economic, trade and investment liberalization, initially prompted by conditions imposed by primarily the World Bank and the International Monetary Fund, and subsequently reinforced by changes in such regimes.

Yet such liberalization has accentuated the structural vulnerabilities of mineral-producing developing countries. Today, instead of economic diversification, they have on average less diversified economies that are more concentrated, for instance, in low value-added mineral and agricultural exports—both of which are extremely sensitive to external price shocks.

The Africa Mining Vision (AMV) recognizes that if African countries are to move to mining sectors that are integrated into national and regional economies, with domestic firms heavily involved, and from the current predominance of mining enclaves, governments will have to push through substantial shifts in policy and practice in a range of economic sectors. It acknowledges that transforming the mining enclave into part of a dynamic resources-based industrial economy will require “proactive and deliberate actions from key stakeholders, particularly governments”.<sup>1</sup>

This chapter looks at the scope granted by current international trade and investment regimes for national strategies. It focuses on actions by governments to promote industrial development, economic diversification and value addition along the mineral value chain, and local enterprise promotion. It covers issues such as policy instruments for economic diversification and industrial development and tools to enhance value addition. The legal architecture for trade and investment is based on agreements of the World Trade Organization (WTO) and on international investment and trade agreements such as bilateral investment treaties, and bilateral, regional and multi-lateral trade agreements.

## The context

The Addis Declaration, a precursor to the AMV<sup>2</sup>, called on “AU Member States to work together to ensure that international agreements that they enter into enhance rather than undermine Africa’s policy space for integrating mineral resources development into their economies”. The declaration took into account that African countries are increasingly negotiating trade and investment agreements, especially with developed countries, that require greater liberalization than required by the WTO. They typically involve greater liberalization of trade in goods and services, rules on investment and public procurement, as well as more stringent intellectual property protection. The declaration therefore urged African countries and regional economic communities to ensure that current negotiations of Economic Partnership Agreements (EPAs) and overall WTO negotiations do not limit national development policy, and do avoid the “lock-in effect” of trade liberalization, which has accentuated the commodity dependence of low-income African countries.

Historically, the space and flexibility of international rules on tariff application, subsidies, export restrictions, performance requirements for foreign firms and intellectual property were exploited by countries implementing national industrial development policies. The newly industrialized economies of Asia are oft-cited examples, but “indeed there are few examples of successful industrialization where government did not actively promote industry”<sup>3</sup>

The current international trade and investment regime has accentuated developing countries’ difficulties in advancing their national interest and sustainable development objectives. International agreements have progressively

reduced the scope for national development strategies and policies of the type that were employed for the transition of today’s industrialized countries, including producers of natural resource-based mineral commodities.<sup>4</sup> These agreements have, for example, constrained the possibilities of using subsidies to develop local production of new products or new methods of production, and of imposing on foreign investors performance requirements that favour technology transfer and the use of domestically produced components.<sup>5</sup>

Although developing countries can benefit from WTO’s Special and Differentiated Treatment provisions, one assessment of these provisions concluded that it was doubtful that current provisions were enough to enable least-developed countries, for example, to promote their economic development and reduce their international economic marginalization. The majority of these provisions failed to exempt such countries from WTO rules, in line with their development, because many of the provisions were “best endeavour” clauses rather than obligations.<sup>6</sup>

The greater trade liberalization process has accentuated the structural vulnerabilities of mineral-producing developing countries. Today, instead of economic diversification, they have less diversified economies that are more concentrated, for instance, on low-value-added mineral and agricultural exports, which are extremely sensitive to external price shocks. UNCTAD (2010) noted that “By the end of the 1990s the production structure of the [Sub-Saharan African] sub-region had become reminiscent of the colonial period, consisting overwhelmingly of agriculture and mining.”

## Tariffs

Tariffs are the most commonly used trade instrument for supporting industrialization. All today’s industrial economies used them extensively to protect infant industries as they evolved towards competitiveness. Moreover, lessons from other parts of the world, especially Asia, show that tariffs were important in developing manufacturing

for domestic and export markets. Tariffs can contribute to very positive (but different) industrial and domestic enterprise development outcomes.<sup>7</sup>

Tariff reduction has been a centrepiece of trade liberalization since the 1980s, accompanied by a decline of

manufacturing in, for example, Africa and Latin America. The application of tariffs has become more contentious since the creation of the WTO and the consequent prohibition and circumscription of many domestic policy instruments that were key elements of pre-WTO industrial policy toolkits. The Uruguay Round reduced average industrial tariffs by all WTO members but left developing countries with considerable flexibility by not requiring wholesale liberalization of all tariff lines. Rather, each developing country was free to determine which tariff lines to “bind” and the extent of tariff reduction on each product line.

Most African countries have bound only a proportion of their tariffs and these are at relatively high levels. In practice, however, the applied rates are much lower because of conditions attached to lending by the Bretton Woods institutions or governments’ commitments through bilateral and regional trade agreements. In some African countries, local manufacturers of industrial mineral products (such as cement manufacturers in East Africa and aluminium product manufacturers in Ghana) have complained about the damaging effects of tariff reduction and the flood of competing imports as a result of trade liberalization.<sup>8</sup>

The non-agricultural market access (NAMA) negotiations under the WTO’s Doha Round could drastically restrict the use of industrial tariffs that came out of the Uruguay Round. On the basis of proposals from developed countries, NAMA seeks to bind and reduce industrial tariffs, harmonizing tariffs among products and countries.<sup>9</sup> The immediate effects on Africa will vary from heavy impacts on the eight African countries that are expected to cut their tariffs using the “Swiss formula”, to smaller impacts on least-developed countries that will not be required to apply the formula (but will still be required to increase the proportion of goods with bound tariffs). Even the least-developed countries will thus see their policy space constricted.

Akyuz (2009) has noted that “an irreversible commitment to low tariffs across a whole range of sectors would carry the risk of locking developing countries into the prevailing international division of labour since many of them would need to provide support and protection to new sectors needed for industrial upgrading”. Overall,

the longer-term implications of proposed binding and cuts in industrial tariffs could be detrimental to capital accumulation, technological progress and productivity growth since these hold the key to narrowing income gaps and catching up with richer countries.

Outside the WTO, various free trade agreements—notably the EPAs between the majority of African countries and their biggest trading partner, the European Union (EU)—will restrict the use of tariffs on imports from the EU. The EPAs are intended to replace the preferential trade arrangements under the Cotonou Agreement with WTO-compatible trade agreements, but they cover much more than trade in goods. Under the EPAs tariffs will be eliminated on up to 80 per cent of imports from the EU over specified periods in exchange for duty- and quota-free access to EU markets. Standstill provisions mean that new tariffs cannot be introduced and existing ones cannot be increased.

Given the size and diversity of manufactures that Africa imports from the EU<sup>10</sup>—in 2006 machinery, chemicals and manufactured goods accounted for 78 per cent of imports from the EU—eliminating tariffs will affect the support that they can provide in developing local manufacturing industry, including mineral-based activities.

Interim EPAs contain narrow lists of sensitive products that are excluded from tariff elimination; they also have very narrow provisions for protecting infant industry. These provisions do not, however, make up for the policy freedom lost by the tariffs eliminated on most European goods under the EPAs. Although it is hard to make specific pronouncements about these provisions’ precise constraining implications for mineral-based industrialization, national and regional negotiators do not seem to have considered the development of these and related sectors when drawing up the sensitive product lists. In most cases the lists’ composition was informed by static considerations of the needs of current industries: dynamic policy objectives, such as diversifying economically and setting up new industries, played very little part.

National governments and regional blocs also failed to coordinate coverage of sensitive product lists across EPA groupings. This omission will make the creation of

trans-boundary value chains much more difficult, which also implies that the value addition of mineral products will not be optimized. “This means that future policies to promote the development of new productive sectors will not be able to incorporate a selective tariff protection element, typical of these policies and largely used in the past by today’s developed countries”.<sup>11</sup>

Industrial tariffs are not always the best tool to promote diversification and technological upgrading. But developing countries need them in their arsenal: tariffs on particular product categories, reflecting the path of technological upgrading, can be a key instrument of sectoral policy to support diversification and technological improvement.<sup>12</sup>

## Non-tariff barriers

Non-tariff barriers in potential markets, especially developed countries, have long constrained the viability of processing and beneficiation industries in developing countries that export raw materials. The number of technical measures, such as safety standards and technical regulations, as well as those promoting environmental objectives, has increased. By 2006 little more than 10 years after the Uruguay Round was concluded, government-mandated testing and certification requirements had risen sevenfold.

Legitimate non-tariff barriers for meeting environmental concerns offer opportunities to access new markets or maintain existing ones, based on environmentally sound practices. Problems arise, though, when the purpose of technical measures goes beyond their legitimate

Similarly, Akyuz (2009) notes that “since industries do not emerge spontaneously, tariffs may need to be raised for new, more advanced industries (e.g., high-tech products) as they emerge sequentially in the process of industrial upgrading, while being phased out for less advanced industries (labour-intensive and low-tech products) as they gain competitiveness. Thus, at any point in time, effective use of tariffs for industrialization would require the coexistence of very low and very high tariffs...In the process of sequential build-up of competitive industries under temporary infant-industry protection, the optimal level and structure of tariffs would change over time.”

Thus trade agreements should be in line with developing countries’ ability to diversify and upgrade technologically.

objectives. Some countries may use them as strategic instruments of trade policy, such that measures become a form of protectionism and can unfairly restrict imports.<sup>13</sup> A recent proposal from Argentina on the NAMA negotiations points out that non-tariff barriers, for example in the chemical sector, distort international trade and increase export-related transaction costs for domestic industries, placing them at a clear disadvantage relative to other WTO producers.

During the past few years, several mineral-exporting countries have expressed concern about the potential for national and regional legislation to become non-tariff barriers to developing-country mining exports. One notable case is examined in box 9.1.

**Box 9.1****Anxieties over REACH****Highlights**

The Regulatory Framework for the Registration, Evaluation and Authorization of Chemicals (REACH) is the European Union (EU) chemicals legislation that will manage the safe use of chemicals throughout their entire lifecycle. It has particular ramifications for metal producers, applying directly to metals, metal compounds and metals in alloy manufactured in and imported into the EU.

In effect since June 2007 the REACH system has four pillars: registration, evaluation, authorization and restriction of chemicals. It will apply to all substances, on their own, in preparations and in articles manufactured in or imported into the EU market in quantities of 1 tonne or more a year. REACH requires most chemicals within the scope of the Regulation to be registered in order to have the right to be manufactured in and to have access to the EU market. Pre-registration and registration apply directly to metals, metal compounds and metals in alloys manufactured in or imported into the EU market. It does not apply to minerals, ores and ore concentrates if they are not chemically modified. Without pre-registration, access to the EU is denied. If pre-registration is not completed and the marketing or use of the substance continues, the producer or importer and clients are at risk, as marketing is then illegal.<sup>1</sup>

**Concerns**

Government and industry representatives in Latin America, North America and Africa have expressed their concerns that REACH rules have the potential to become a non-tariff barrier to mining-related products.

- The India-Brazil-South Africa Ministerial Declaration made in March 2006 in Brazil expressed concern at the unintended consequences of REACH on developing economies. It urged the EU to ensure that REACH would not become a technical barrier to trade. Ministers also expressed concerns that high compliance costs, the possibilities for substituting commodities and the lack of technological and human resource capacity to comply might render the EU market inaccessible for exports from developing countries. The South African representative noted that REACH would impose additional costs of approximately €9.2 billion on developing countries as well as entail a lengthy registration process.
- Ministers from 26 African countries at the Second African Mining Partnership Plenary in February 2005 in Cape Town expressed their concerns about potential “unintended consequences” of REACH legislation on exports to Europe of African mineral products and the need, therefore, to ensure that REACH would “not create obstacles to economic development and poverty reduction strategies of African states”. They called for exemptions, simplified procedures and assistance to African, Caribbean and Pacific countries to comply with REACH rules.

*Source: Yupari, 2010.*

*Notes:*

**Export taxes**

Export taxes can play a key role in developing competitive industries in commodity-dependent developing countries, and are widely used: recent data suggest that 11 per cent of world trade in natural resources is covered by export taxes,<sup>14</sup> but just 5 per cent of total world trade. Some 15–25 per cent of world trade in fish and forestry, and 5–10 per

cent of that in fuels and mining, are also estimated to be covered by export taxes. These taxes are not prohibited by the relevant WTO agreement.<sup>15</sup>

Many regional trade agreements have, however, forbidden their use on the basis that they can distort trade and prices,

such as those under the EU, the North American Free Trade Agreement (NAFTA), CARICOM, MERCOSUR and ANZCERTA. Some bilateral free-trade agreements also prohibit export taxes, such as Canada–Chile, Canada–Costa Rica, Japan–Singapore and the EU–Mexico.<sup>16</sup>

In the mining industry, the incidence of these taxes varies greatly among product sub-headings, with iron, copper, natural or cultured pearls and stones the most frequently subject to export taxes (table 9.1).

**Table 9.1**

**Export taxes on selected minerals**

Mineral commodity	Country	Export tax rate (per cent unless otherwise noted)
Aluminium	China	15
	Russia	6.5
	Indonesia	10
Manganese	China	20
	Ghana	6
Molybdenum	China	15–20
	Russia	6.5
Nickel	Russia	5–30 (depending upon form)
	Ukraine	30, but not less than €5.50/kilogram
Steel scrap	China	10
	Russia	15 or €15/metric ton (whichever is larger)
	India	15
	Argentina	20
	Guinea	GNF25,000/metric ton (\$4.98 at current rates)
	Vietnam	35
Tin	China	10–20
	Russia	6.5
	Congo, Dem. Rep. of	11
	Indonesia	10
Tungsten	China	10
	Russia	6.5
Zinc	China	5–15
	Ukraine	30, but not less than €0.32/kilogram

Source: Price, 2009.

Many developed economies, notably the United States, EU and Japan, are increasingly critical of export taxes and other export restrictions. They argue that these distort trade and pose a threat to the competitiveness of their firms by driving up the price of their inputs while lowering them for their competitors. China in particular has been targeted by both the United States and the EU and accused of giving unfair advantage to its export firms by placing restrictions, including taxes on some of its exports, in particular rare earths. In 2009 the United States and EU lodged coordinated complaints against China at the WTO, arguing that its export restrictions on raw materials

such as coking coal were distorting the global market and damaging their steel manufacturers.<sup>17</sup>

The EU, which imports 70–80 per cent of its primary resources, had already declared “an open global market completely free of all distortions on trade in energy and raw materials” as a key goal of its trade policy.<sup>18</sup> The EU’s strategy of using free trade agreements to prohibit or restrict the use of export taxes has been implemented through EPAs, which go well beyond the goods agreements needed for WTO compatibility. For example, the goods agreement of the comprehensive EPA signed in



2007 between the EU and the 15-member Caribbean Forum (CARIFORUM) contains an undertaking by the Caribbean countries to eliminate export taxes within three years. The interim EPAs with African countries and regions contain various provisions that aim to eliminate or severely restrict the use of export taxes to exceptional circumstances or on mutual agreement. Côte d'Ivoire and Ghana, for example, can apply export taxes if they can show exceptional circumstances, the East African Community can use export taxes if it is authorized by an EPA Council and Cameroun and the Southern African Development Community (SADC) need to consult the European Commission before applying such taxes.<sup>19</sup> Such provisions limit the ability of African signatory countries and regions to use export taxes in promoting the processing of primary commodities, including minerals.

Some African, Caribbean and Pacific countries have expressed concerns about the EPA restrictions on export taxes based on implications for policies aimed at stimulating movement up the value chain. In April 2008 a conference of African Union ministers of trade and of finance issued a joint declaration on the EPAs in which they called for the review of various provisions in the interim EPAs, including those on export taxes.

Disagreement over export taxes is one of the more contentious issues holding up the conclusion of comprehensive EPAs involving African EPA groupings.<sup>20</sup> Namibia signed

the SADC interim EPA only after reserving the right not to implement the agreement unless the provision on export taxes was lifted.

Even though export taxes are not a magic bullet, they could be part of policy strategies that provide incentives for developing domestic manufacturing or processing industries that have higher value-added exports and that generate jobs in mineral-rich developing economies.<sup>21</sup>

The Dar es Salaam Declaration of Trade Ministers of LDCs calls for flexibility in using export taxes on fuels and mining commodities as they are legitimate tools for development.<sup>22</sup> Furthermore, a well-designed progressive export tax system could serve as an income stabilization instrument—tax rates follow world commodity prices up and down, capturing windfall gains and moderating the adverse impact of falling prices on producers' income.<sup>23</sup>

Distortion of market price signals is a potential negative effect of export taxes. For this reason, some authors have suggested that policymakers should also consider other potential counter-effects such as intermediate traders' rather than processors' appropriation of the lower cost margin as a result of imperfections in internal markets, and the negative impacts on the country's terms of trade if the international market for the processed good is dominated by a single buyer.<sup>24</sup>

## Foreign investment regulation and domestic policy space

Africa's liberal mining regimes illustrate the importance its governments give to attracting foreign direct investment (FDI). Many governments see extensive foreign investment regulations—in, for example, WTO agreements, regional or bilateral trade agreements and bilateral investment treaties (BITs)—as trade-offs for securing FDI.

BITs are important international binding instruments that shape the current framework for FDI. From the very beginning, treaties focused on investment protection against nationalization or expropriation, assurances for the free transfer of funds and the provision for dispute-settlement mechanisms between investors and host states.

Developed countries sign BITs to open investment opportunities for their firms abroad, and developing countries sign them to increase FDI. But the influence of BITs in attracting investment is disputed, with separate studies by UNCTAD and the World Bank concluding that their influence is at best marginal.<sup>25</sup>

The General Agreement on Trade in Services (GATS) and the Agreement on Trade Related Investment Measures (TRIMs) are WTO's agreements with the most direct and indirect provisions on FDI. GATS creates a framework under which WTO members decide which service sectors and subsectors they will liberalize, subject to the basic



principles of market access and national treatment and to the conditions to which access and treatment are subject. GATS therefore offers countries the option of allowing foreign service providers entry into their markets under conditions that they pre-determine. It covers a wide range of services from the most complex to the simplest delivered through four modes of supply of services. Delivery mode 3—“commercial presence”, which covers FDI by service suppliers—is the key mode for foreign investment regulation.

Market access and national treatment under GATS have implications for domestic policy space, especially in directing foreign investment towards national development goals and in promoting domestic enterprises. Most African countries have few prospects for exporting services, especially under mode 3, and so commitments may not come with any reciprocal benefits. Thus despite requests from other WTO member countries—mainly developed economies—most African countries have been cautious in making commitments, though some have made sweeping

commitments in many sectors and sub-sectors under modes 1, 2 and 3. For example, the United States made a request to Ghana in 2002 demanding removal of all limitations on market access and permit national treatment in the provision of energy services under modes 1, 2 and 3.

The extent to which these agreements can help African countries to balance investment protection and wider economic development depends on their content and on whether rules and limitations they impose are consistent with countries' broader development goals and social expectations.<sup>26</sup>

The important question is therefore whether and how far African countries can retain the ability to make the choices and decisions necessary for promoting their national development objectives by influencing, through direct or indirect measures, the amount and kinds of FDI that they receive, and more important, freely regulate the conduct of the foreign firms involved.

## Performance requirements

One area where the constraining effects of the international investment regulatory regime are patent concerns performance requirements on foreign firms, described as “a hallmark of industrial policy”. Historically, countries have combined incentives with regulations to encourage firms, especially foreign, to deepen and extend their integration into local economies and to fulfil national development objectives. These measures have been used to pursue a range of policy objectives, including increasing the use of local content, especially by foreign firms, as well as promoting export manufacturing, technology transfer and joint ventures between local and foreign firms; developing local human resources; encouraging learning by doing; and creating jobs.<sup>27</sup>

TRIMs outlawed many performance requirements, forbidding those inconsistent with the international principle of national treatment or the prohibition on quantitative restrictions stated by the General Agreement on Tariffs and Trade (GATT). TRIMs is not intended to regulate investment specifically and does not directly affect WTO members' ability to regulate and place conditions on the

entry and use of foreign investment.<sup>28</sup> From a development perspective the important point is TRIMs' “prohibition of domestic-content requirements whereby an investor is compelled or provided an incentive to use domestically produced rather than imported products, and of foreign-trade or foreign-exchange-balancing earnings or to foreign exchange inflows attributable to investment”.<sup>29</sup> National policy and legal measures favouring domestic products could therefore conflict with TRIMs measures.

Developing countries strongly opposed TRIMs and many have shown little enthusiasm for eliminating the instruments it targets since they see them as necessary for encouraging industrialization. Many also feel that TRIMs imposes restrictions on government action without reciprocal restrictions on the actions of multi-nationals. According to UNCTAD (2007: 1):

*“Many countries have used these performance requirements as a tool to maximize the benefits from foreign direct investment (FDI). For instance, local content requirements, which force foreign investors*

*to purchase a proportion of their production inputs from domestic sources, are generally designed to create local jobs and training, promote the transfer of technology and ameliorate trade imbalances”.*

At the 2005 WTO ministerial meeting in Hong Kong it was agreed that least-developed countries could continue to apply existing TRIMs till 2012 subject to further extension by the WTO Council for Trade in Goods. Furthermore least-developed countries could introduce new TRIMs for five years from 2005, which could be extended. But all least-developed countries are to phase out all TRIMs by 2020. These decisions should have been significant for Africa, which has 33 of the 49 countries classified as least-developed countries, including mineral-rich countries such as Angola, the Democratic Republic of the Congo, Guinea, Liberia, Madagascar and Sierra Leone. Because the Doha Round is incomplete, however, these decisions have not been implemented, though least-developed countries could press for them to be treated as an early harvest from the negotiations, so that they come into force before the Doha Round negotiations are concluded.

Performance and economic requirements such as those to increase linkages between foreign investors and local manufacturers would help in balancing extensive liberalization normally promoted by international investment agreements, and it is possible to make them consistent with WTO rules. Local content and technology transfer measures could help to establish upstream and downstream

linkages and contribute towards the host country's economic development.<sup>30</sup> But performance requirements need to have clear objectives and to be effectively enforced.

As seen, since the 1990s Africa's strategy for attracting FDI into mining has involved a liberal approach to how and where companies source their inputs of goods and services. Some countries allow mining companies to retain a large slice of their foreign exchange earnings outside the producing country to cover their imports and other operational expenses. In Ghana, for instance, the central bank allowed external retention of 80 per cent in 2008 and 2009, though according to the Ghana Chamber of Mines actual external retention was only 37 per cent in 2008 and 34 per cent in 2009, and in 2008, Ghana's LSM procured 47 per cent of inputs and 71 per cent of consumables locally.<sup>31</sup> The difference between allowable retentions and actual foreign procurement in the Ghanaian case could be an example of how mining firms are becoming more sensitive to host country interests in backward/upstream linkages.

Mining companies' local content strategies have tended to focus on their immediate scope of work, that is, those construction or management functions and activities essential to develop or operate the project. Policies should therefore seek to better align these strategies with aspects of public economic policy and priorities for industrial development, private sector development, investment promotion and competitiveness.<sup>32</sup>

## Performance requirements and BITs

Some regional and bilateral agreements are much more restrictive than TRIMs on performance requirements because they address all measures regulating FDI, not just those related to trade. NAFTA, for example, prohibits performance requirements as a condition for making,

or after making, an investment.<sup>33</sup> BITs with the United States, exemplified by that with Rwanda (box 9.2), have prohibitions on investment performance requirements that go well beyond those that are only trade related.<sup>34</sup>

**Box 9.2****Excerpts from the 2008 US–Rwanda BIT****Article 8: Performance Requirements**

1. Neither Party may, in connection with the establishment, acquisition, expansion, management, conduct, operation, or sale or other disposition of an investment of an investor of a Party or of a non-Party in its territory, impose or enforce any requirement or enforce any commitment or undertaking:

- (a) to export a given level or percentage of goods or services;
- (b) to achieve a given level or percentage of domestic content;
- (c) to purchase, use, or accord a preference to goods produced in its territory, or to purchase goods from persons in its territory;
- (d) to relate in any way the volume or value of imports to the volume or value of exports or to the amount of foreign exchange inflows associated with such investment;
- (e) to restrict sales of goods or services in its territory that such investment produces or supplies by relating such sales in any way to the volume or value of its exports or foreign exchange earnings;
- (f) to transfer a particular technology, a production process, or other proprietary knowledge to a person in its territory; or
- (g) to supply exclusively from the territory of the Party the goods that such investment produces or the services that it supplies to a specific regional market or to the world market.

2. Neither Party may condition the receipt or continued receipt of an advantage, in connection with the establishment, acquisition, expansion, management, conduct, operation, or sale or other disposition of an investment in its territory of an investor of a Party or of a non-Party, on compliance with any requirement:

- (a) to achieve a given level or percentage of domestic content;
- (b) to purchase, use, or accord a preference to goods produced in its territory, or to purchase goods from persons in its territory;
- (c) to relate in any way the volume or value of imports to the volume or value of exports or to the amount of foreign exchange inflows associated with such investment; or
- (d) to restrict sales of goods or services in its territory that such investment produces or supplies by relating such sales in any way to the volume or value of its exports or foreign exchange earnings.

US and Canadian BITs typically seek pre-establishment concessions, which mean that investors benefit from most favoured nation treatment and national treatment even before they set up. They are therefore released from performance requirements, which tend to be conditions for entry. EU BITs, in contrast, tend to make most favoured nation and national treatment status subsequent to entry,

making an investor more susceptible to performance requirements.<sup>35</sup>

Some BITs have started to refer to sensitive issues such as human rights and socio-economic development overall. South Africa's more recent BITs, for example, refer to its Black Economic Empowerment programme (box 9.3).

**Box 9.3****South Africa's BITs and development challenges**

Post-apartheid South Africa pushed for BITs to open the country to greater foreign investment. However, questions are being raised over the compatibility of some of the terms of BITs that have extensive policy measures, such as those on improving the lot of historically disadvantaged South Africans. The relationship between the country's constitutional provisions aimed at redressing the effects of many decades of deeply entrenched social injustice and the limitations imposed by some BITs is also a subject of discussion.

Some foreign investors and their governments argue that the Black Economic Empowerment programme runs counter to the guarantees provided in treaty obligations offering national treatment, most favoured nation treatment, or fair and equitable treatment. The programme has measures for employment-equity, preferential access to government contracts and licences as well as sector-specific charters that require companies to meet indicators and targets for divestiture of minority equity stakes to partners in the programme. To avoid such arguments, the BIT with the Czech Republic specifically upholds measures to promote equality or advance people disadvantaged by unfair discrimination.

The government's BIT Policy Framework Review of 2009 stated that major issues for developing countries were not being addressed in the BIT negotiating process, thereby imposing rules with severe implications for sustainable development. It argued that investment provisions in BITs did not compel foreign companies to transfer technology, train local workers or obtain materials locally. Also missing were special or differential treatment clauses that would specifically provide for the economic development of treaty parties. Finally, it found that treaties appeared to favour the interests of developed countries and their business entities, and lacked adequate safeguards, exceptions and limitations necessary for legitimate government activity.

*Sources: Bastida and Yupari, 2009; Department of Trade and Industry of the Republic of South Africa, 2009a, 2009b; South African Human Rights Commission, 2009; Peterson, 2006.*

**Performance requirements in EPAs**

The EPAs between the EU and some African regions—including interim EPAs with 18 African countries signed at end-2007—could restrict African countries' policy freedom in regulating EU investors. The interim EPAs cover only goods but contain varying provisions on trade issues, such as investment, competition, public procurement, services and intellectual property, which could be the subject of future negotiations under "rendezvous" clauses. The interim EPAs of the Côte d'Ivoire, Ghana and the Central African Economic and Monetary Community have the most comprehensive provisions.<sup>36</sup>

The EU retains a consistency in its demands for comprehensive EPAs with all African negotiating regions. Of the African, Caribbean and Pacific members, only the CARIFORUM grouping has concluded a comprehensive EPA, and its provisions offer pointers to what the EU will be seeking in African EPAs. This agreement has been

described as "exceeding", in that it goes far beyond the thresholds for determining WTO compatibility laid down in article XXIV of the GATT, article V of the GATS as well as many "WTO-plus" terms. On this basis Sauvé and Ward (2009) conclude that:

*"The CARIFORUM EPA represents a significant departure from earlier trade arrangements between the [European Commission] and the CARIFORUM region by moving beyond goods trade and incorporating areas such as trade in services, investment, government procurement, competition policy and trade-related intellectual property matters. ... Indeed, even while allowing for inevitable differences in EPAs to be (possibly) concluded with the African and Pacific regions owing to differences in economic structures, development levels and collective preferences, the argument can be made that the CARIFORUM EPA has set the*

*bar for all subsequent EPA negotiations and perhaps indeed for future preferential trade agreements (PTAs) entered into by the EU. There is little doubt that such a bar is quite high”.*

Provisions under the services, investment and competition agreements in the CARIFORUM EPA combine to limit the powers of CARIFORUM countries to regulate the entry of EU capital, and set the terms on which EU firms enter and operate. All these agreements provide for the national treatment of EU capital in CARIFORUM countries, such that they cannot be disadvantaged in any way relative to local economic actors, by measures such as performance requirements. Under the investment agreement, the parties agreed to remove restrictions on foreign ownership, prohibit the use of instruments normally used to screen

foreign investment for its local benefits and to provide national treatment for foreign capital, which implies outlawing performance requirements “that encourage economic linkages or protect domestic enterprises”.<sup>37</sup>

*“Thus, by sidelining domestic tools to encourage foreign investment, the EPA model displaces the adaptability that domestic instruments offer in terms of the tailoring and staging of regulation as the costs and benefits of market access in different sectors become more apparent over time. It is in this sense that the EPA model demands that [African, Caribbean and Pacific] states relinquish core policy space; they must accept legal restrictions in a treaty instrument that lacks adaptability and that will be very difficult to adjust or withdraw from”.*<sup>38</sup>

## Expropriation provisions

Expropriation ranked among the top controversial issues when international laws on investment were developed. The basic principles of customary international law on expropriation state that foreign-owned property may not be expropriated or subject to a measure tantamount to expropriation unless four conditions are met: the measure is for public purposes; it is taken in accordance with applicable laws and due process; it is non-discriminatory; and it is accompanied by compensation.<sup>39</sup>

International legal doctrine distinguishes between two broad categories of expropriation: direct expropriation, which entails the actual taking of property by direct

means, including the loss of all, or almost all, useful control over property; and indirect taking, where the measure deprives the owner of the substantial benefits of the property, without formal expropriation. One important type of indirect taking is a regulatory expropriation, where a measure is taken for regulatory purposes, but has an impact on the economic value of the investment sufficient to be considered an expropriation. In recent years, the potential for investment disputes over alleged regulatory expropriation has shot up. The literature suggests that the main challenge is how to distinguish between legitimate exercise of government authority and regulatory taking that requires compensation.

## Investor–state dispute settlement

International investment agreements often provide for settling disputes by negotiation between the parties. Some include provisions authorizing arbitration between foreign investors and host states without involving the investor's home state. The most elaborate provision for investor–state arbitration is in NAFTA (and some recent FTAs that follow the NAFTA model).

NAFTA authorizes the investor to submit claims that the host state has breached the investment chapter of NAFTA to arbitration before the World Bank's International Center

for the Settlement of Investment Disputes, the Additional Facility or an ad hoc tribunal under arbitration rules of the United Nations Commission on International Trade Law. NAFTA provisions address issues that provisions in international investment agreements are often silent on, such as the submission of the same dispute to local courts, the place of arbitration, appointment of experts, remedies available, interim measures and enforcement of awards.<sup>40</sup>

Since the late 1990s, the number of treaty-based investor–state disputes has grown enormously. Some have

gone to the International Center for the Settlement of Investment Disputes, the United Nations Commission on International Trade Law, the Stockholm Chamber of Commerce, ad hoc arbitration, and the Cairo Regional Centre for International Commercial Arbitration. The rise in such disputes has triggered discussion on what should

be the proper counterweight to investors' rights in international investment agreements. Some recent agreements emphasize public policy concerns, balancing private and public interests by including general exceptions to protect public health, safety or the environment.

## Policy implications

As the number of trade and investment agreements continues to expand, a new generation of agreements is emerging with sophisticated and complex provisions in which countries and multi-national companies have to work. Developing countries may face two main challenges.<sup>41</sup>

First is a challenge of capacity. Many lack the resources to participate fully in writing and implementing international investment rules. Without the necessary knowledge, negotiators from African (and other) developing countries may find it hard to take part in talks to obtain concessions, or may engage in them without fully grasping the consequences of any agreement they reach.

Second is a challenge of content. Countries may find it difficult to link the goal of creating a stable, predictable and transparent FDI policy framework that enables international firms to advance their objectives with their own objective of retaining the margin of freedom needed to pursue their development goals.

It is of overriding importance for African and other developing countries to maintain a consistent eye for the full implications of the specific provisions of any treaties they are invited to enter, and not to sign them on the basis of what could turn out to be a naïve faith in these treaties' objectives and significance.

## Endnotes

- 1 AUC-UNECA, 2009: 7, emphasis added.
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4. UNCTAD, 2006a.
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We must stop the Chinese onslaught- Aluworks boss.  
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10. European Commission, 2007.
11. South Centre, 2008.
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13. UNCTAD, 2006b.
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15. According to Article XI.I of GATT "No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party."
16. Piermartini, 2004.



17. Office of the United States Trade Representative, 2009.
18. Mandelson, 2008.
19. Stevens et al., 2008.
20. AUC, 2010.
21. Third World Network, 2010.
22. WTO, 2009.
23. WTO, 2010.
24. Piermartini, 2004.
25. Hallward-Driemeier, 2003.
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30. Singh, 2007.
31. Ghana Chamber of Mines, 2009.
32. ODI(Overseas Development Institute), 2006.
33. Yupari, 2010.
34. Tobin and Rose-Ackerman, 2003.
35. Molineuvo et al, 2006; Malik, 2006.
36. Stevens et al., 2008.
37. Van Harten, 2008.
38. Van Harten, 2008.
39. UNCTAD, 2007b.
40. UNCTAD, 2006b.
41. UNCTAD, 2007b.



# Mineral Management: The Power of Institutions

# 10

CHAPTER

*“A well-governed mining sector contributing to an industrializing Africa”—The Africa Mining Vision*

**ONE OF THE** central themes in this report is the need for a shift in policy focus from a concentration on extracting minerals to a broader framework that integrates policies for mining, industry and development. This follows from the goals in the Africa Mining Vision (AMV) of a sector

that is not only “a key component of a diversified, vibrant and globally competitive industrializing African economy”, but is also “knowledge-driven” and “catalyzes and contributes to.... broad-based growth and development”.

Other chapters have suggested that this central theme and these goals have implications for institutional policy. This chapter seeks to explore these implications, as well as those relating to fulfilling the vision of a sustainable and well-governed mining sector.

## Rethinking the role of institutions to meet development objectives

Integrated policies on industrialization and development require an analysis of the links between the institutions responsible for mining and those for other sectors (such as infrastructure, agriculture, trade, industrial development, technical training, employment and health). They also require an analysis of these institutions’ capacities. Mkandawire (2010) re-emphasizes a conception of institutions as (potentially) “transformative instruments in the context of extreme poverty and under-development” and not merely as “constraints on social actors”.<sup>1</sup>

A recent review of the African state in post-colonial economic performance reveals the controversy over state institutions directly engaged in production, marketing and other commercial activities.<sup>2</sup> It also notes the impact of World Bank programmes in weakening state institutions already in crisis and in promoting an ideology inconsistent with building a set of strong programmes to lead efforts at structural

transformation. It argues for a “developmental state”—a state that “provides [leadership and] guidance in constructing ... [a comprehensive development] framework”; a framework that contains “incentives and sanctions, so that economic agents who meet targets are rewarded and those who fail are penalized”. It recognizes that development policy requires dialogue with key social and economic agents, but argues that, because “free market forces will not drive economic transformation on their own, the developmental state must play a central role in resource allocation and in efficient coordination of crucial economic activities”.<sup>3</sup>

Evans (2010) makes the seemingly obvious point that “only a flexible, creative process of exploration and experimentation that pays careful attention to local institutional starting points” can help to establish institutional arrangements that produce a developmental state. This approach has, however,

been contrasted with the actual experience of many African countries over the last three decades or more.<sup>4</sup>

The following points therefore bear underlining: institutions are more than formal structures; transplanting borrowed institutions does not necessarily work (though a comparative study of others' experiences can contribute to creative adaptation); a healthy scepticism is required to assess proposals for adopting models, given a tendency to create ideal

constructs that ignore the limitations of the real institutions from which they are abstracted and the particular contexts in which they emerge and operate; institutions take years to make an impact, which requires a long-term view rather than short-term fixes; and the capacity of African nations to evolve successful arrangements is severely undermined to the extent that the reform process is—regardless of the rhetoric—driven by powerful external agendas.

## Institutions promoting mineral-based linkages

The most important institutions are those with responsibility for technical education, infrastructure development (especially power, transport and telecommunications) and financial resource mobilization. Linkage development requires promotion of technical and entrepreneurial skills, support for institutions that offer training for science and technology research and development (R&D), as well as a fostering of greater interaction between such institutions and industry.<sup>5</sup>

Upstill and Hall (2006) give an account of extensive Australian government support for minerals-related R&D. Some of

the institutions through which this is funnelled are the Commonwealth Scientific and Industrial Research Organization and the Cooperative Research Centres programme based in the Department of Innovation, Industry, Science and Research. An analogous institution for Canadian government support for R&D is the Canada Mining Innovation Council. Box 10.1 discusses South Africa's main mineral research institution.

**Box 10.1****Mintek: World class mineral and metallurgical innovation**

South Africa's national mineral research organization, Mintek, is one of the world's leading research and development (R&D) institutions specializing in mineral processing, extractive metallurgy and other mineral-related services.

Mintek works closely with industry and other R&D bodies, providing a complete range of process technology development services, from preliminary laboratory bench-scale investigations to large-scale pilot plant testing, and integrated mineral process flow sheet design and development in support of bankable feasibility studies.

It carries out engineering design, plant construction and commissioning activities with local and international partners. Mintek's technology services are backed by comprehensive laboratory and pilot plant facilities for sample preparation, crushing and grinding, physical separation processes, flotation, smelting, leaching, metal recovery and purification. These facilities are supported by internationally accredited analytical laboratory and mineralogical services.

About 27 per cent of Mintek's annual budget is funded by the Parliamentary Science Vote, with the rest funded by commercial activities for clients worldwide. Activities include contract R&D, sales of products and services, technology-licencing agreements and running joint-venture private companies.

As an R&D institute, Mintek is an important part of the South African National Innovation System. After a Science White Paper in 1996, South Africa reviewed all science councils, including Mintek, to improve their science and technology competitiveness. The Government set up a National System of Innovation, along with an Innovation Fund, to evenly spread the research funds under the Parliamentary Science Vote to all players in the science, engineering and technology arena through a competitive research-bidding process.

This encouraged collaborative research between the Government, science councils, universities and firms. Among the criteria for accessing the Innovation Fund are potential for commercializing research results and products, a clear illustration of national economic and social benefit, and a demonstration of how South Africa's competitive position in innovation would be improved, locally and internationally.

Several mineral-based projects, with the theme of value addition, have been launched with support from the Innovation Fund. Examples include computer-aided design and manufacture of gold, platinum and diamond jewellery; research into manufacturing high-temperature platinum and manganese alloys for aerospace; and setting up alternative technologies for the local titanium industry.

*Source: Mintek, [www.mintek.co.za](http://www.mintek.co.za); National Advisory Council on Innovation, [www.nacinnovation.biz/](http://www.nacinnovation.biz/); Department of Science and Technology of the Republic of South Africa, [www.dst.gov.za](http://www.dst.gov.za).*

International financial institutions have their own role to play along the value chain, including building capacity among public and private entities and providing grants

and loans, including the African Development Bank (box 10.2).

**Box 10.2****The African Development Bank**

The African Development Bank's mission is to help to reduce poverty, improve living conditions for Africans and mobilize resources for the continent's economic and social development. The institution aims to assist African countries—individually and collectively—in their efforts to achieve sustainable economic development and social progress.

Established in 1963, it supports the development agendas of its regional member countries. It has traditionally been involved in developing infrastructure. Its support for the Infrastructure Programme and Spatial Development Initiatives of the New Partnership for Africa's Development, the African Peer Review Mechanism and its sponsorship of the African Legal Support Facility are recent instances of initiatives linked to the broader framework for the mineral policy proposed by the Africa Mining Vision.

The African Development Bank is an important player in its regional member countries. Its engagement in mining has included direct lending to private entities, equity investments and technical assistance. Projects have ranged from construction of cement plants, mining of iron deposits to bauxite processing.

*Source: African Development Bank Group, [www.afdb.org](http://www.afdb.org).*

In 2006 the New Partnership for Africa's Development (NEPAD) initiated a continent-wide study on spatial development initiatives (SDIs) that proposed an indicative list of development corridors across the continent, mainly anchored on mineral resources, which could underpin development in other sectors.<sup>6</sup> Annex 2 of the AMV contains a summary of the SDI concept and contends that “the SDI model provides a practical way to achieve a regional approach to development which goes beyond the limitations of multi-country projects, encouraging a sustained process of integrated development within a region defined by its economic potential rather than its political boundaries”.<sup>7</sup>

The SDI approach promotes the spatial “densification” of resource corridors to catalyse development in other sectors by densifying the trunk infrastructure with feeder infrastructure to realize stranded potential in other sectors, particularly agriculture and agro-processing, forestry and wood processing as well as tourism. Resource contracts need, however, to stipulate third-party access to infrastructure at non-discriminatory tariffs in order to realize this collateral impact. The SDI approach also promotes sectoral deepening through backward and forward linkages of all resource projects (not just minerals) and infrastructure projects in a given area. (Chapter 11 summarizes the projects in which regional economic communities are harmonizing mineral policies, and SDI has a role in that.)

**Map 10.1****Potential Resource-based African Development Corridors**

*Nepad SDP: Source AMV, Annex 2, AU, Addis Ababa 2009.*

## Traditional institutional roles in mining

The institutions with responsibility for more traditional mining roles, such as licensing exploration and mining, and negotiating agreements for such operations, can promote linkages. The imposition on mining companies of obligations for building open access infrastructure (see chapter 7) is one potential mechanism. Support offered by these institutions to local small-scale miners in skills training, new equipment or access to funding on soft terms can also enhance development impacts. Some initiatives, conceived and implemented in a sustained manner, could have a large impact not only on local participation in mining but also integrate mining better into national economies (see chapter 5).

At least in terms of formally expressed policy prescriptions, we have long moved from the position where the fundamental objective was to limit state institutions on the basis of an ideology of faith in the free market.<sup>8</sup> That position often led to a dogmatic insistence on cutting back public expenditure, with little regard for strategic considerations of development objectives, thus resulting in a weakening of institutions which were already under pressure from the crises facing the economies in which they operated.<sup>9</sup>

The controversy over the role of state mining enterprises has been alluded to: many have been unsuccessful in Africa and have disappeared from the institutional landscape

(see chapter 2), but some remain both in Africa (such as Morocco's state-owned phosphate company—see box 8.1 in chapter 8) and in other regions (see chapter 3).<sup>10</sup> To be meaningful, discussions in Africa about creating such enterprises (similar to those in Namibia and South Africa) have to identify carefully the particular objectives to be served, take account of the variety of historical experiences and be ready with mechanisms for addressing the institutional weaknesses that in the past contributed to their poor performance.

The importance of government geological survey institutions is now widely acknowledged. They can provide a base of information, which improves both the quality of decisions and the negotiating positions of African countries when dealing with international companies. Yet many

geological surveys on the continent have poor human and material resources. Institutions with responsibility for regulating the environmental impact of mineral operations have become more prominent aspects of the legal landscape in Africa over the last two decades.

Institutions for designing mining fiscal regimes and for collecting and auditing revenue from mineral operations require attention. Skills requirements become even more pronounced in designing and administering resource rent taxes.<sup>11</sup> Some countries have sought to improve performance by setting up specialized units in government revenue agencies and cooperating with the state institutions that have specialist knowledge. For the Extractive Industries Transparency Initiative particularly, some have used private auditors.

## Negotiating contracts

The AMV identifies the critical nature of the initial contract negotiations and the need “...to improve the capacity of African states to negotiate with the resource TNCs on the resource exploitation regime. Generally these negotiations are extremely asymmetrical, where the TNC is highly resourced and skilled and the state poorly”.<sup>12</sup> It notes that these contracts tend to be long-term and negotiated early

on, before mineral extraction begins, presenting serious obstacles to renegotiating them. It is therefore important for government negotiators to identify crucial issues at the outset, including those involving potential linkages, even though the local economy may not be able to take advantage of them immediately. Other important outputs are shown in box 10.3.

**Box 10.3****The Africa Mining Vision key outputs of mineral contracts**

The Africa Mining Vision recommends that negotiators should secure agreement on the following before signing any mineral contract:

- An equitable share of the resource rents.
- A flexible fiscal regime that is sensitive to price movements and stimulates national development.
- Third-party access to the resource infrastructure (particularly transport, energy and water) at non-discriminatory tariffs.
- The development of the local resource supplier/inputs sector where feasible (particularly capital goods, services and consumables) through flexible local-content milestones.
- The establishment of resource processing industries through the use of flexible value-addition milestones and incentives and the upfront stipulation of competitive pricing of resource outputs/products in the domestic market for the life of the project.
- The development of local human resources and technological capacity through stipulated investments in training and research and development, preferably in partnership with the state.
- Provisions that safeguard transparency and good governance as well as enforce internationally accepted safety and health standards, environmental and material stewardship, corporate social responsibility, and preferential recruitment of local staff.

*Source: AU-UNECA, 2009: 21.*

Multi-lateral organizations have become involved in building capacity for negotiating contracts. The African Development Bank has established an Africa Legal Support Facility (box 10.4) to provide specialist legal assistance primarily related to litigation over vulture fund claims, but also to build the capacity of resource-rich African countries to negotiate complex commercial transactions, including those for natural resources. Similarly, the World Bank has set up the Extractive Industries Technical Advisory Facility for resource-rich, developing-country

governments. The United Nations Development Programme has assisted several African countries through its Regional Project for Capacity Development for Negotiating and Regulating Investments Contracts. The United Nations Economic Commission for Africa, through its regional Institute for Development and Economic Planning, based in Dakar, Senegal, is initiating a course in mineral-contract negotiations and policy development, based on the AMV. The aim is to offer the course every year to senior policymakers and other stakeholders.



**Box 10.4****African Legal Support Facility**

More than 70 per cent of the nearly \$1 billion dollars in judgments awarded to plaintiffs in lawsuits instituted by vulture funds have been against regional member countries (RMCs) of the African Development Bank.

Partly in consequence, African finance ministers in June 2003 called for a legal technical assistance facility to be set up to help Highly Indebted Poor Countries in addressing the growing problem of vulture funds. The Commission for Africa in March 2005 also called for such a facility for African countries. The Policy Big Table in February 2007 called for a technical advisory facility to help RMCs to negotiate extractive resource contracts and to create an appropriate, enabling environment with a modern legal and regulatory framework. The African Development Report 2007, which was devoted exclusively to natural resources for sustainable development in Africa, noted the need for sound principles to guide the design of efficient contracts in Africa's natural resource sector.

Management at the African Development Bank hired an external consultant to conduct a study on the viability of such a facility. Confirming the pressing need for one, the study recommended an autonomous, independent, international organization with an approach focusing on combating vulture funds; assisting RMCs negotiate complex transactions; and building capacity of RMCs in these and related areas.

Source: AMV, AU 2009, p21.

These initiatives reflect the glaring need to swiftly build capacity in this vital area. Much can also be learnt from the contributions made to developing countries by the Technical Assistance Group of the Commonwealth Secretariat

(later, the Economic and Legal Advisory Services Division, now incorporated into the Special Advisory Services Division). Stronger coordination would be useful, however, to avoid duplication and possible conflict among initiatives.

## Regulating government discretion in awarding mineral rights

How governments decide on granting mineral rights is one of the key areas that national legal systems provide rules for. The underlying aim is to reconcile the flexibility and control that government institutions want with the demands of transparency and efficiency that can improve the quality of decisions and help to realize economic value for the state.

Some regimes leave the decision on the person to whom mineral rights are granted a matter of government discretion, subject to broad constitutional and administrative law principles. That it might take litigation or other contentious mechanisms for resolving disputes to assess whether they have been properly applied in a specific case makes them both expensive and, often, too unpredictable to be reassuring to many applicants or other interested parties. Some criteria give more (or less) weight to the

order in which applications were submitted in limiting the discretion to make an award.<sup>13</sup>

For large-scale projects, the person deciding on the grant of mineral rights in many jurisdictions is the minister responsible for mines. Provision may be made requiring him or her to consult or act on the advice of another public body or official whose recommendations are submitted in writing. If the minister is permitted to and intends to disregard that recommendation, he or she must say why in writing. These arrangements allow for technical inputs into the decision.

Some countries assign such grant decisions to officials below ministerial level. Some decisions may even be made locally rather than by central government—the power to grant a small-scale quarry licence, for example.

Another method of regulating discretion is to require it to be made by auction. Bids are submitted and a selection made from an evaluation of all qualified bids. This method is meaningful for areas that have been systematically demarcated, that possess detailed information and that have generated substantial interest among potential bidders. The evaluation criteria have to be clearly articulated and weighted for the process to be both credible and efficient. (A note on auction processes is attached as Appendix L.)

## Other governance challenges

Transparency in decision-making and in accounting for revenue is an area whose desirability appears to elicit near unanimity. The practical implications, however, need to be pursued systematically. Registers of grantees of mineral rights as well as the existence and content of mineral development agreements ought to be made available to the public in practice, not just in theory. The Extractive Industries Transparency Initiative, for example (see chapter 7), seeks to mobilize pressure in support of revenue transparency, and its principles can be advanced through a variety of institutional arrangements. Some countries have established bodies with separate legal personalities as the principal promoting vehicle; others have limited themselves to less formal mechanisms to coordinate and focus the work of existing institutions. What matters is whether the structures put in place are primarily rhetorical devices to announce adherence to transparency principles—or to promote and implement them.

Public participation in decision-making is another norm broadly accepted as desirable (see chapter 4). The notion of a democratic developmental state proposes the incorporation of such participation into institutional arrangements for pursuing the development agenda.<sup>14</sup> The role of civil society organizations in advancing such participation and deepening democratic governance is increasingly acknowledged.

Mining organizations (such as national and regional chambers of mines) and trades unions have a long history of making organized representations to and influencing government. Since the United Nations Conference on the Human Environment in 1972, a broader range of civil

African states could consider classifying their territories into areas of unknown mineral resources where a discretionary regime may be the only feasible one; known resources where an auctioning procedure has a better chance of working; and partially known resources where further state exploration work is required.

society organizations have sought and gained legitimacy in intervening in policy formulation at international forums.

In Africa, such bodies operate in areas related to minerals nationally and regionally. For specific projects, they have engaged in advocacy for human rights and environmental issues, sought enforcement of established norms, organized community participation in environmental and social impact assessment proceedings and worked with mining companies on alternative-livelihood and community-development schemes. On policy formulation, some of their vocal issues relate to elaborating and applying human rights and environmental norms in mining operations, to revenue transparency and to the inadequacies of fiscal regimes. Their efforts have contributed to strengthening voice and participation of citizens, to filling gaps in capacities of enterprises and state organizations and in enhancing the legitimacy of the outcomes of consultative processes. Still, much remains to be done nationally and regionally to bring civil society organizations more into decision-making.

Kaufmann et al. (2009) identify six broad elements in their evaluations of the state of governance in various countries. These are voice and accountability; political stability and absence of violence; government effectiveness; regulatory quality; the rule of law; and control of corruption.

These elements are indeed useful in assessing the state of government institutions in a country, but a note of caution must be sounded. The more one tries to combine them into one broad evaluation of a country's institutions, the less useful the exercise can become. The instruments

used in measuring each of them contain many aspects that are subjective and less precise than one might think initially. The constituencies whose perceptions form the basis of particular measurements may be weighted in favour of influential but unrepresentative groups. Nor are the elements exhaustive: the development ends served by government institutions have to be a central part of the assessment of the state of governance.

The African Commission on Human and Peoples' Rights<sup>15</sup> and the African Peer Review Mechanism<sup>16</sup> are two continental institutions that offer possibilities for enhancing the evaluation of government performance. The African Charter on Human and People's Rights includes provisions on managing natural resources.<sup>17</sup> For the African Peer Review Mechanism, Adotey Bing-Pappoe observes that it, "by requiring governments and civil society to engage collectively over the issues that face the nation, and to do so using the evidence from development practice, should help to improve both the incidence and quality of

evidence-based decision-making".<sup>18</sup> Steps are being taken to include specific indices relating to the governance of extractive industries in the mechanism's evaluation process.

More broadly, a dynamic approach to addressing governance challenges has to incorporate the role of external actors—including businesses, shareholders and their home governments. Achieving accuracy in weighting and depicting the relationship between internal governance limitations and the activities of external actors requires careful and concrete analysis. Furthermore, in the words of Stevens and Dietsche (2008), parsimonious explanations that ignore time and historical context are unlikely to capture the dynamics of the range of "variables that can induce positive institutional change." A focus on internal capacity constraints or governance limitations too often provides a pretext for diverting attention from the obstacles that Africa's historically determined place—as a cheap supplier of raw materials—puts in the way of its development possibilities.

## Policy implications

Implications for policy are as follows:

- The development agenda has to be central to establishing and evaluating institutions and their arrangements.
- The promotion of linkages between mining and other sectors must be a critical part of institution building in Africa, nationally and regionally.
- Important institutions on the continent urgently need capacity enhancement in many areas.
- A concrete analysis of the context—rather than reflexive adoption or imposition of models—is vital to institution building.
- Attention has to be paid to improving the criteria by which different aspects of governance are evaluated to make them more meaningful, objective and representative.
- The African Commission on Human and Peoples' Rights and the African Peer Review Mechanism offer serious possibilities to improve governance.

## Endnotes

- 1 Edigheji, 2010.
- 2 UNECA, 2011.
- 3 UNECA, 2011: 7.
- 4 Mkandawire, 2009.
- 5 For accounts of such interactions in South Africa, see Walker and Minnitt (2006) and Lydall (2009).
- 6 NEPAD, 2006.
- 7 AUC, 2009.
- 8 In addition to other works cited above this chapter, see, for example, Rodrik (2006) and Lall (1995).
- 9 Mkandawire, 2001.
- 10 See also Auty (1993).
- 11 Land, 2010; Calder, 2010.
- 12 AUC, 2009: 21.
- 13 UNECA, 2004: 81–83.
- 14 UNECA, 2011; Mkandawire, 2010.
- 15 [www.achpr.org](http://www.achpr.org)
- 16 <http://www.aprm-international.org/>
- 17 <http://www.humanrights.se/upload/files/2/MR-instrument/African%20Charter%20on%20Human%20and%20Peoples%20Rights.pdf>
- 18 Bing-Pappoe, 2010; see also Masterson et al. (2010).

# Regional and Sub-regional Strategies in Mineral Policy Harmonization



CHAPTER

*“Regional ... integration in reducing transaction costs, establishing intra-regional synergies, enhancing competitiveness and realizing economies of scale would catalyze minerals cluster development...*

*For goods, services, capital and other factors to freely flow ... there is need to expedite intra-regional harmonization of laws, regulations and fiscal regimes, among other critical factors”*

— *The Africa Mining Vision*

**INCREMENTAL, SECTOR-BASED REGIONAL** economic integration has been accepted for decades as a central component of any forward-looking and all-encompassing development strategy for Africa. Cooperation

in minerals through policy harmonization is thus part of the overall process of strengthening intra-regional economic community (REC) harmonization and their eventual integration as intended by the African Union.

The benefits of regional minerals integration may be illustrated through the European Coal and Steel Community, the precursor of European integration (box 11.1). Four of its features may provide useful lessons as Africa seeks to enhance integration through harmonizing its mineral policies.

First, minerals and other natural resources, often involved in the cause and maintenance of conflict on the continent, can be used strategically to strengthen regional economic integration, ensure peace and security and boost cooperation. Second, collaboration of supranational institutions can help direct and expedite economic integration. Third, removing tariff and non-tariff barriers on goods and services enhances trade and strengthens economic integration and allows for economies of scale. And fourth, regional economic integration as well as peace and security—as promulgated in the Africa Mining Vision (AMV)—can be achieved despite historical hostilities and entrenched mistrust.

**Box 11.1****The European Coal and Steel Community**

The European Coal and Steel Community (ECSC) was established by the Treaty of Paris in 1951 as a common market for coal and steel among six signatory states: France, West Germany, Italy, Belgium, the Netherlands and Luxembourg. It was one of the first organizations based on supranational integration and a direct precursor to the EU.

It consisted of four institutions: a High Authority (the executive), a Common Assembly, a Special Council of Ministers and a Court of Justice. In 1967 the ECSC merged with the European Economic Community (also known as the Common Market) and the European Atomic Energy Community to form the European Community. In 1993 the European Community became the EU. The ECSC ceased operation in 2002 when the Treaty of Paris expired.

The ECSC removed internal tariffs and other trade barriers (including on transport), created a common external tariff, regulated production and sales, and facilitated investment in coal and steel. Its life matched a period of increasing trade in coal and steel among member states, but it was largely ineffectual in regulating these industries, mainly because of fundamental changes in market conditions in the 1960s: the expected fears of supply scarcity were not borne out. Member states' coal industry was overtaken by oil and other sources as the primary energy and the steel industry by the emergence of large international centres of steel production. Member states also often supported their national industries (including protectionism) without regard to the ECSC, which did little to stop them. It also failed to prevent new cartels from forming.

Yet outweighing all this were the political accomplishments. The idea behind the ECSC was to make a third world war economically unthinkable and materially impossible: the ECSC was established to ensure longer-term peace through economic integration, and was designed to pave the way for broader supranational institutions. In these aims, it was successful: war has not been seen in Western Europe since 1945—despite the centuries of hostility between some member states—and the ECSC laid the foundation for the EU, one of the world's most successful examples of international economic integration.

*Sources: Alter and Steinberg, 2007.*

Yet Africa has peculiar attributes, including foreign political interference, that needs to be factored into policy harmonization and economic integration. For example, African countries are at very different stages of development and have different colonial legacies. The presence of many RECs also presents obstacles, especially when

coordination is lacking. The dream of an African Economic Community through a six-stage<sup>1</sup> process envisaged in the Abuja Treaty can, however, be realized through overcoming these barriers and transforming the landscape of the various RECs, which often have overlapping.

## The integration landscape in Africa

Africa's integration landscape consists of an array of RECs, including the eight that the African Union Commission

(AUC) recognizes as the building blocks of an African Economic Community (table 11.1).

**Table 11.1****African regional economic communities**

Regional economic community	Geographical spread
Arab Maghreb Union (UMA)	Five countries encompassing most of North Africa
Common Market for Eastern and Southern Africa (COMESA)	19 countries including Egypt in North Africa, all East African countries (except Tanzania) and seven countries in Southern Africa
Community of Sahel-Saharan States (CEN-SAD)	28 countries in West, Central and Northern Africa
East African Community (EAC)	Five countries in East Africa
Economic Community of Central African States (ECCAS)	10 countries in Central Africa
Economic Community of West African States (ECOWAS)	15 countries encompassing all West Africa
Inter-Governmental Authority on Development (IGAD)	12 countries in the Horn of Africa and the northern part of East Africa
Southern African Development Community (SADC)	14 countries in all Southern Africa

Source: Authors.

Dual or multiple membership is common. In addition to these RECs, six other groups exist: the Central African Economic and Monetary Community, the Economic Community of Great Lakes Countries, the Indian Ocean Commission, the Mano River Union (MRU), the Southern African Customs Union (SACU) and the West African Economic and Monetary Union (WAEMU).

Given these numerous regional groupings, African leaders have in many forums stressed the need for greater coordination and harmonization in building an integrated continent. Chapter XIX of the Abuja Treaty stresses the importance of establishing the African Economic Community “through the coordination, harmonization, and progressive integration of the activities of regional economic communities.” It further enjoins member countries “to promote the coordination and harmonization of the integration activities of regional economic communities

with the activities of the Community.” Article 3 of the 2001 Constitutive Act of the AU also underscores the need “to coordinate and harmonize policies between the existing and future Regional Economic Communities for the gradual attainment of the objectives of the Union.” The adoption of the Minimum Integration Programme (box 11.2) demonstrates continental commitment towards integration and the acceptance that such integration must appreciate the differences among member states and that, through harmonization, they can minimize policy differences. NEPAD reaffirms the importance of creating an Africa-wide integrated socio-economic framework with the primary objectives of eradicating poverty, promoting growth, and integrating Africa into the world economy. Sectoral coordination is accepted as a viable strategy towards the gradual and systematic deepening of regional integration on the continent.



**Box 11.2****Minimum Integration Programme, 2009–2012**

The African Union Commission (AUC) formulated, at the request of the African Union policy organs, the Minimum Integration Programme (MIP) to address the mixed results achieved in regional and continental integration. In terms of the Abuja Treaty, only some RECs have achieved beneficial outcomes.

The MIP comprises initiatives that the RECs and regional integration stakeholders have prioritized to speed up integration. It is intended to be implemented by RECs, member states and the AUC alongside Africa's development partners on the basis of subsidiarity.

The MIP was developed using "variable geometry" integration. This approach allows RECs to progress at different speeds. It has the following main objectives and prioritized sectors.

**Main objectives**

- Situate RECs in the context of implementation of the Abuja Treaty.
- Identify priority regional and continental programmes initiated by the AUC, implementation of which falls under the purview of national or regional authorities under the principle of subsidiarity.
- Identify regional and continental projects in the AUC and the RECs, implementation of which is reliant on the principle of subsidiarity.
- Strengthen current inter-REC economic cooperation initiatives, and identify measures likely to accelerate integration in specific priority sectors or areas.
- Identify priority areas that require bold coordination and harmonization in each REC and among RECs.
- Assist the RECs in identifying and implementing the priority activities they need to fulfil to move to the different stages of integration set out in article 6 of the Abuja Treaty.
- Help the RECs to implement the MIP using a clearly defined timetable.
- Develop and implement other support measures to help establish a single market in the priority areas.
- Identify joint inter-REC programmes and projects.

**Prioritized sectors**

- Free movement of services, goods and capital; peace and security; infrastructure and energy; agriculture; trade; industry; investment; and statistics.
- Each of these sectors has sub-sectors, which outline the objectives of the first phase (2009–2012) as well as initiatives to be undertaken in that time.
- Financing MIP
- The MIP is expected to be financed by internal sources, including statutory contributions; contributions from pan-African financial institutions; and cooperating partners. The formation of an African Integration Fund has been proposed.

Policy harmonization—in minerals particularly—as part of enhancing integration and facilitating movement of goods and services has deep historical roots in Africa. The development of the integrated road and rail infrastructure in Southern Africa, for example, which was designed to support and integrate mining activities both nationally and internationally, illustrates physical integration at an earlier stage. The interconnected road and rail infrastructure from colonial times, linked to the extractive

industries, still forms major channels for moving goods and services in many countries. Spatial development initiatives and development corridors (see chapters 8 and 10) also seek to use natural resource exploitation as part of the continent's overall infrastructure development strategy.

The Lagos Plan of Action for Economic Development for Africa, adopted in 1980, reignited consciousness of the importance of sectoral cooperation in enhancing regional

integration. During the 1980s and 1990s, regional conferences of ministers responsible for mineral resources were held in attempts to develop mechanisms for coordinating the sector, with the United Nations Economic Commission for Africa (UNECA) a key player. The Durban Declaration of 1997, emphasizing harmonization of policies and collaboration in the minerals and energy sectors, was one outcome. These meetings, while embracing bilateral collaboration from simple information networks to more complicated attempts at common policies and harmonized legislation, standards and procedures, also advocated an Africa-wide approach for minerals.

Many of the meetings recommended strengthening sub-regional public institutions, allocating additional resources to the sector and promoting mineral-based industries to help ensure that the continent benefited from exploitation of its abundant resources. A major weakness of these pronouncements was the lack of detailed time-bound action plans for member states. The pace of implementation was left to individual member states, invariably slowing progress. Yet the vision of integration for the industry is still alive among member states and remains a key rallying point for integration.

The decision by AU heads of states and government in 2009 to merge the African Mining Partnership (AMP) with the AUC Conference of Ministers Responsible for Mineral Resources Development and Management transformed the AMP into a recognized technical institution within the structures of the AUC. That demonstrated the belief that sectoral integration is important to regional integration. The AMP, launched in February 2004 by 21 African ministers for mining with the purpose of concretizing and implementing the minerals and mining objectives of NEPAD, played a coordinating role in building consensus on continental strategies in minerals. The AMV, adopted in February 2009, was in fact born out of discussions under the AMP as part of the consultative process.

Many other initiatives towards integration are based on collaboration in minerals. These include regional

organizations such as the Southern and Eastern African Mineral Centre (SEAMIC), established in 1977 under the UNECA umbrella. It embraces the continent's efforts to use the sector to promote socio-economic development and strengthen integration. The overall mission of the centre, whose membership includes Angola, Comoros, Ethiopia, Mozambique, Tanzania and Uganda, is to promote mineral development in Southern and Eastern Africa through establishing an independent and reliable centre of knowledge, research and development (R&D), services and products, training and a hub for geo-information for the sub-region.

SEAMIC's objectives with continent-wide significance include setting up sub-regional networks of programmes and services to promote regional collaboration; encouraging mineral-based industrialization; promoting the free flow of capital, labour, goods and services for developing the minerals sector; and facilitating sub-regional harmonization of mineral policies and legislation. The Geo-science Data compilation in Eastern and Southern Africa (GEODESA) project under SEAMIC, in which 13 countries took part, was designed to improve the quality and accessibility of geo-science and exploration information, and were executed using geological surveys. It created an inventory of regional exploration surveys and a geological information systems database. The methods of sharing the standardized geo-scientific information among member states through GEODESA could be extended to the whole of Africa.

Similar collaborative initiatives include the Pan-African Network for a Geological Information System and PAN-FACT, which harmonizes data collection and storage methods. Networks such as the Communities and Small Scale Mining have also helped harmonize such methods, and the adoption of common positions. The Yaoundé Declaration and the Harare Declaration are other Africa-wide approaches.

## Moves to harmonize sub-regional mineral policies

African countries have pursued sub-regional policy harmonization through their RECs. Initiatives in SADC, ECOWAS, WAEMU, EAC and MRU reveal varying experiences in instigating or mapping out sectoral strategies for strengthening economic integration, including the many challenges involved.

### Southern African Development Community

The Southern African Development Community mineral policy harmonization programme is anchored in the Protocol on Mining, adopted in 2000, which provides for a formal framework for cooperation and integration. The protocol identifies specific areas for cooperation in the region's mineral industry, including harmonization of national policies, facilitation of the development of human and technological capacities, promotion of private sector participation, and the observance of international standards for health, safety and environmental protection. SADC ministers of mines approved a framework<sup>2</sup> in March 2006, followed by an implementation plan<sup>3</sup> in October 2007 to operationalize it.

A review of SADC national mineral policies in 2009 identified national action points for each member state, and national effort is targeted at closing the policy gap. Current work is on developing a framework for certification and tracking of mineral products from the sub-region, from producing areas to export points. Policy harmonization

Strategies generally fall along three lines: policy alignment, the adoption of common standards and the enactment of common codes or common elements of mining legal and regulatory regimes. Many analysts have noted, however, that adopting these common codes or common elements is likely to be effective only after policy has been aligned and common standards promulgated.

has become urgent in the face of increases in illegally acquired and traded minerals entering the export chain, resulting in member states losing significant revenue.

The SADC process may offer pointers for others. First, the framework and implementation plan have been developed through a participatory process. Second, despite the non-binding nature of the framework's recommendations and plan, the long history of collaboration within the sub-region has cemented commitment to developing uniform operating conditions to promote sustainable mineral exploitation and as part of the Protocol on Mining. Third, although progress tracking—sustained by technical assistance from UNECA's Southern African Office through its multi-year programme<sup>4</sup> with the SADC Secretariat—has helped overcome the Secretariat's human resource shortages, in the longer term SADC needs to develop capacity to run the programme (even with continued participation by UNECA and other partners).

### Economic Community of West African States

The ECOWAS Directive on the Harmonization of Guiding Principles and Policies in the Mining Sector, adopted in July 2009, outlines the sub-region's objectives in the minerals sector. The aspirations of the Directive reinforce the Revised ECOWAS Treaty signed in Cotonou in 1993 which requires member states to “harmonize and co-ordinate their policies and program in the field of natural resources” and to “coordinate their programs for the development and utilization of mineral and water resources.” The objectives of the Directive as outlined in Article 2 are to;

- provide guiding principles for policy harmonization in the mining sector of member states to ensure high standards of accountability for mining companies and Governments, promote human rights, transparency and social equity as well as provide protection for local communities and the environment in the sub-region;
- provide a mining environment that is responsive to macro-economic circumstances and sustainable development imperatives, and balances the need to use appropriate incentives to attract investors with

that to protect the revenue base and the resources of member states;

- improve transparency in mineral policy formulation and implementation, as well as in revenue collection and use, and to promote the participation, and enhance the capacity, of mining communities,
- provide for a harmonized mineral policy and legal framework for member states; and
- ensure that harmonization takes into account the different stages of development of member states.

Each Member State is expected to gazette the Directive and provide resources through the national budget for its implementation through National Action Plans. The Directive empowers the ECOWAS Commission to supervise its implementation, provide member states with the necessary technical and financial support and report annually to the council of Ministers on progress.-

## West African Economic and Monetary Union

The policy harmonization efforts of WAEMU form part of the strategy in the sub-region for creating uniform operating conditions and promoting policy convergence within the customs union. The harmonization effort is underpinned by the WAEMU Common Mining Policy adopted in 2000. The specific objectives of the CMP include: (i) the establishment of an enabling environment for mining investments; (ii) the diversification of mining production; (iii) the processing of mineral products locally; (iv) the co-existence of industrial mines and cottage-type mines; and (v) the preservation of the environment.

The CMP encompasses the following programmes: (i) the harmonization of regulatory frameworks; (ii) the promotion of the mining sector; (iii) the establishment of a sub-regional system on geo-mining information; (iv) the building of capacities of institutions and scientific research bodies; (v) the development of intra-African trade of mining products; and (vi) the protection of the environment. Under the CMP, the Council of Ministers

The ECOWAS Commission has developed a strategy to implement the Directive, including developing the draft ECOWAS Mineral Development Policy (EMDP).<sup>5</sup> -This was reviewed by stakeholders in April 2011, and an Action Plan to implement the Policy developed. The EMDP consists of nine strategic axes/areas and programmes focused on the vision of harnessing mineral resource capital to facilitate sustainable economic growth and integrated socio-economic development in the sub-region. The Action Plan includes a monitoring and evaluation mechanism in which the ECOWAS Commission is the Champion.

The recent but fast-evolving ECOWAS experience underlines the importance of designating a champion of the process (the ECOWAS president), of providing resources for supervision and assistance to member states, of setting a time frame to complete the process, and of consulting all critical stakeholders.

specifies through Regulations and Directives, the actions to be undertaken by Member States to implement these programmes.

The WAEMU Community Mining Code (CMC) governs all the operations relating to the prospecting and exploration for, and the exploitation, possession, processing, transportation and marketing of mineral substances throughout the whole territory of the Union. The enforcement of compliance with the CMC is underpinned by the WAEMU Constitutive Treaty of 1994.

Harmonizing the WAEMU framework and the ECOWAS mining directive would be a key step in developing a uniform operating environment among the 15 member states in the sub-region. Since harmonization of their sectoral programmes is already underway, this should be extended to the minerals industry as collaboration deepens.

## East African Community

The treaty establishing the EAC emphasizes the commitment by member states towards: (i)-creating an enabling environment for investment in the mining sector; (ii) establishment of databases, information exchange networks and the sharing of experiences in the management and development of the mineral sector using electronic mail, internet and other means for the interactive dissemination of mineral information; and (iii) harmonizing mining regulations to ensure environmentally friendly and sound mining practices. The sub-region's Protocol on Environment and Natural Resources management, through Article 18 on Management of Mineral Resources, re-emphasizes the commitment to develop and harmonize common policies, laws and strategies for access to

and exploitation of mineral resources by member states. Further, one of the eight strategic intervention areas in the 3rd EAC Development Strategy also focuses on the management of mineral resources and commits to complete the harmonization of mineral policies and mining regimes within the sub-region.

Although harmonizing mining policy in the EAC has yet to take root, member states show commitment, partly through the 3<sup>rd</sup> EAC Development Strategy. Sub-regional programmes and plans should incorporate the aspirations of the AMV. The process should also be guided by enforceable commitments and implementable sanction mechanisms for non-compliance.

## Mano River Union

The re-launch of the Mano River Union (MRU) in 2004 after years of conflict has re-energized member states to focus on strengthening cooperation, speeding up integration and promoting sustainable development. Previously, member states had operated under different sectoral policy frameworks even though they have had aspirations of becoming a customs union since the launch of the MRU in 1973. In this renewed spirit of regional integration, and with countries having similar geological endowments that often cross national borders, a sub-regional approach to exploiting these resources is imperative.

The MRU commissioned the World Bank in 2008 to study the sector and recommend strategies for a harmonized policy environment. The draft report emphasizes the need for harmonizing laws and regulations, starting with artisanal mining, as part of overall integration moves.

The MRU action plan for policy harmonization, based on the World Bank review, should be informed by initiatives already under way in West Africa and continent-wide. It should also reflect the ECOWAS mining directive and development policy, the AMV and the recommendations to emerge from the current review of African mineral regimes spearheaded by the AU.

## Lessons and policy options

The above features reveal the voluntary nature of compliance with these initiatives. Although some of these approaches have time frames, most of the policy frameworks are non-binding and depend on the pace of member states in conforming, hence the differences in pace in each sub-regional group. SADC, for example, has made reasonable progress towards policy harmonization mainly because of the sub-region's historical linkages. The SADC approach, benefiting immensely from "community spirit", has lessons for other countries on the continent. Elsewhere,

WAEMU has made the process smoother through the Common Mining Code.

The benefits of the ECOWAS approach, which empowers its president to supervise implementation, to provide member states with the necessary technical and financial support as well as to report annually to the council of ministers on progress should be studied more carefully and possibly adapted by other RECs. The time-bound nature of the ECOWAS framework makes for easy monitoring



and timely corrective action to ensure that all member states are on track.

Turning to the future, the regional blocks should consider developing mechanisms to make compulsory the implementation of the harmonization agenda, with penalties for non-compliance (if possible) and with a structure to monitor progress and offer assistance where required. On the other hand, making compliance to agreements mandatory might go against the spirit with which sub-regional communities and indeed the AU have operated. This is largely intergovernmental in approach rather than supranational.

As African integration deepens, the content, focus and implementation strategies of these regional approaches need to be harmonized to ensure that they are in conformity with the aspirations of the AMV. The current initiatives towards the rationalization of regional economic communities and their programmes augur well for sectoral policy harmonization as embodied in the AMV.

The completion of these processes would eventually lead to a harmonized policy environment at the continental level, in which the minerals sector contributes to sustainable development—as envisaged by the AMV.

The regional and continent-wide harmonization of policies, laws, programmes and strategies offers other benefits. To cite just one example, harmonized approaches for attracting foreign investment would curtail the mutually destructive incentive competition to attract investors. It would also facilitate cooperation in developing mineral resources, especially where these run across borders.

In addition, regional economic integration that creates larger markets, easing the movement of factor flows and boosting intra-African cross-border economic cooperation, would greatly facilitate “the development of mineral resources (especially industrial minerals) for local production of consumer and industrial goods”—one of the goals of the AMV. Mineral-based industrialization in Africa will benefit from the transformation of fragmented small economies, the expansion of national into regional markets, the overall widening of regional and continental economic spaces and the resultant economies of scale for both production and trade.<sup>6</sup>

The regional and sub-regional experiences are key building blocks for a continent-wide framework as they represent policy convergence at a lower level. Sharing experience is thus key to the overall process. Capacity to execute these initiatives will need to be developed at national, sub-regional and continental levels.

## Endnotes

- 1 Article 6 of Chapter II of the Abuja Treaty on Modalities of the Establishment of the African Economic Community provides for the following stages with varying time frames (Treaty Establishing the African Economic Community, 3 June 1991, Abuja, Nigeria). First stage: strengthening existing RECs, and where they do not exist creating new ones; second stage: strengthening sectoral integration, coordinating and harmonizing activities and gradually eliminating tariff and non-tariff barriers; third stage: establishing free trade areas and then customs unions; fourth stage: coordinating and harmonizing RECs to establish a continental customs union; fifth stage: establishing an African Common Market; and sixth stage: establishing the African Economic Community through monetary and economic union.
- 2 The framework comprises a series of policy recommendations to facilitate alignment in key areas of SADC mining such as: mineral policy frameworks and mineral administrative systems; the fiscal environment; mineral beneficiation; environmental and social responsibilities; small scale mining; and human development, including R&D.
- 3 In October 2007, SADC developed a plan for the implementation of the harmonization framework. The plan consists of eight thematic areas each with recommended activities and outcomes. The areas

are: (i) Policy, Regulation and Administration; (ii) Geological and Mining Information Systems; (iii) Human Resource Development and Institutional Capacities; (iv) Safety, Health and Environment; (v) Investment Promotion; (vi) Value Addition and Research and Development; (vii) Artisanal and Small Scale Mining; and (viii) Social Issues and Gender.

- 4 The United Nations General Assembly in 2006 decided to strengthen ECA's sub-regional offices to promote integration and development. It recommended that the main vehicle for sub-regional technical cooperation should be a multi-year programme with the RECs that directly reflects the priorities of their member states.

- 5 The strategic areas of the EMDP are: (i) improvement in geological and mineral information; (ii) improvement and management of mineral revenue; (iii) local content policy of mineral operations; (iv) building institutional, human, technical and financial capacities; (v) improvement of the institutional, legal and regulatory frameworks; (vi) sustainable development and corporate social responsibility (vii) development of infrastructure for improved access to mineral sites; (viii) development of artisanal and small-scale mining; and (ix) strengthening regional cooperation in the mineral sector.

- 6 UNECA,2010.



# Looking ahead: Key Challenges and Policy Messages

## 12

CHAPTER

**THIS FRAMEWORK REPORT** on Africa's mineral development regimes has looked at African mining from different angles, including its history, current features and the key arguments for driving the search for new

directions based on the Africa Mining Vision (AMV). This chapter summarizes the main challenges confronting African mining, as well as the key policy messages.

### Africa's mining legacy and the search for a new development approach

The paradox of African mining today lies in its historical structural deficiencies. The sector's key characteristics—and challenges—are those of an enclave industry. Most of the industry has very weak links with the rest of the national economy, the mines' ownership and operation are in the hands of foreign companies, most of the minerals are exported in raw form and the industry imports most of its inputs from abroad.

The report argues that the enclave mineral economy is a colonial legacy that post-independence resource nationalism (through new state mining enterprises) failed to redress. Subsequent World Bank reforms, which were designed to attract foreign private risk capital, eliminated

the state's direct role in production and further entrenched the enclave economy.

Hence the search for a new mineral development approach, which accelerated after the start of the commodity-price boom around 2002. Thus some of the central premises of this report and the AMV are that mineral operations must constantly be re-evaluated for their contribution to broad and long-term development goals; that mineral operations need not and ought not to be enclave activities; and that restructuring African mining from its enclave nature is the fundamental task of African policymakers and those committed to having it play a transformative role.

### Optimizing mineral linkages needs a conscious policy approach

The AMV and this report argue that strengthening linkages between mineral resource extraction and Africa's industrial development is vital to enable these resources to play that transformative role. The report finds upstream, downstream, sidestream and lateral migration linkages

are not well developed (apart from transport and energy), reflecting the industry's main orientation—extracting and shipping bulk minerals to overseas markets.

But obstacles prevent such linkage strengthening. They include large infrastructure deficits, which impede movement of goods and services; weak African markets for mineral products, which reflect the overall low level of Africa's industrialization; technological deficiencies; and wide skill gaps.

Nor will linkages develop just because Africa has world-class mineral deposits. Strengthening linkages requires the right policies and strategies to leverage mineral extraction and processing operations into broader economic development outcomes. It requires, for example:

- Greater attention to the minerals that offer greater possibilities for national and regional industrial development and integration.
- Investment in economic infrastructure, particularly power and transport. Planning for such infrastructure needs to explore use by other economic sectors.
- Government involvement in setting terms for access to mineral resources. Such terms must impose linkage conditions on mineral rights holders and provide incentives for investors to structure projects in ways that deepen project integration into the broader national—and regional—economy. These terms could include provisions to ensure a high level of local content.
- Investment in human resources and knowledge development, particularly to expand the higher technical skills required by the minerals industry.
- Regional integration to foster intraregional trade and investment in infrastructure for the region.

## The global mining industry: opportunities still exist

Demand for mineral commodities has surged since early this decade, cutting across many metals, particularly aluminium, copper, zinc, lead, nickel and tin—all with huge global demand. The demand surge comes mainly from huge growth in China's voracious industrial appetite, as well as from industrial expansion in Brazil and India (as well as relatively sustained consumption in industrial countries). Many analysts view mineral commodities as being in a super cycle—a prolonged period of a trend rise in prices.

Such a super cycle offers to governments opportunities for increasing tax revenue (at the very least), and for diversifying the mining value chain (at best). Although Africa has so far failed to benefit much from the commodity-price boom, opportunities are still there. Geopolitical

competition for the continent's mineral resources—driven by concerns of long-term raw material security—are boosting the opportunities for governments of African mineral countries to negotiate more favourable licencing and tax regimes, at the minimum. More boldly, they could reconsider issues of equity participation in mining ventures or new state entities—if these operate commercially and in competition with private firms.

In restructuring African mining towards a more development-orientated regime, as sought by the AMV, Africa's governments could usefully absorb lessons from Latin America. That region's recent and current initiatives are seeking to strengthen the role of state institutions in better structuring the relations between mining activity and national development priorities.

## Boosting the contribution from artisanal and small-scale mining

Artisanal and small-scale mining (ASM), which is prevalent in Africa, exploits a wide range of minerals. It sustains (often poor) livelihoods and makes contributions to

national economies, and has the potential to contribute much more.

Steps need to be taken to bring ASM into the mainstream of economic life, particularly in rural areas, and to offer it the financial and technical support that it conspicuously lacks. The policy environment should encourage cooperation between small- and large-scale miners, including converting ASM into viable operating enterprises. A pragmatic approach would distinguish potentially viable from marginal ASM operations.

A cooperative regional approach could also bridge many of the technical and financial deficiencies of ASM. Alongside

wider international cooperation, it could address the challenge of conflict minerals. Locally, bans on transporting minerals that do not comply with tracking and certification systems need to be enforced, but capacity needs to be enhanced first.

Finally, international norms prohibiting child labour in mining need to be enforced rigorously. Further work is required to explore and implement measures to redress discrimination against women in ASM, whether arising from legal regimes or operational practices.

## Preventing and managing mining impacts

Poor management and regulation of the harmful environmental, social and human-rights impacts of mining have stoked critical and, in some cases, hostile attitudes among mining communities towards the industry and government. Yet these impacts can be reduced, if not eliminated altogether. More broadly, the effects on climate change of mining need greater attention from governments and firms.

Governments should strengthen the frameworks that govern impact assessment, management and regulation. They should also enhance the capacities and effectiveness of regulatory agencies and improve the culture of how these institutions interact with citizens, especially those affected by mining. Improved impact assessment and better planning and coordination between governments and mining firms in compensation, resettlement and relocation projects for alternative livelihood opportunities would help minimize conflict with communities.

## Strengthening corporate social responsibility

It is important to develop and implement corporate social responsibility (CSR) for guiding mining companies' responsibilities. CSR initiatives should complement government development plans—beyond contributing to the socio-economic growth of mining communities—and should be carried out in a framework that is both fully

consultative in conception and implementation and that is part of the broader social development agenda. Governments should follow a CSR approach that makes their own and mining companies' obligations clear, and not leave CSR to ad hoc decisions.

## Improving governance

The report endorses the normative implications of a democratic developmental state. It urges governments to recognize and harness the positive potential of state institutions while promoting democratic norms.

Many African countries have made progress in boosting public participation in framing laws, and in increasing

the space for community and civil society organizations to work in. Yet much more can be achieved—in enforcing existing laws, in pursuing accountability of institutions and more generally in protecting human and labour rights.

Improving state and institutional capacities for making and pursuing policies and regulations is a pervasive

challenge, as is ensuring policy coherence and coordination among institutions and sectors. These two challenges go beyond nations to regional and other interstate

frameworks. Indeed, it is important to create and maintain space for institutional arrangements nationally and sub-regionally, specifically to promote linkage development.

## Paying attention to implications of international trade and investment regimes

At their meeting in Addis Ababa in October 2008, under the auspices of the African Union, Africa's ministers responsible for mineral resources called on "AU Member States to work together to ensure that international agreements that they enter into enhance rather than undermine Africa's policy space for integrating mineral resources development into their economies" and urged "them and the Regional Economic Communities (RECs) to ensure

that the ongoing Economic Partnership Agreements (EPA) and World Trade Organisation (WTO) negotiations do not limit this space". These words are as relevant today as they were three years ago. If the aspirations of the AMV are to be met, African countries will need to cultivate capacities to negotiate agreements that provide the margin of freedom they need to pursue the AMV's development goals.

## Harnessing the benefits of regional cooperation and integration

Regional cooperation and integration provide opportunities for sharing development capacities and abet the movement of factors of production across borders. In addition, policy harmonization provides resistance to, and can even reverse, the "race to the bottom"—a prominent feature of the competition to attract foreign mining investment.

Such harmonization needs to be greatly accelerated. Slow progress so far stems partly from the non-binding nature of most frameworks. It may therefore be useful to explore whether elements of such frameworks could be made binding and time bound, and to monitor the processes of policy harmonization. National and regional processes will need to be aligned and brought into conformity with the aspirations of the AMV.

## Final words

The AMV envisages mining becoming "a key component of a diversified, vibrant and globally competitive industrializing African economy"—without doubt, an ambitious long-term goal. Yet commitment to realizing the goal does not require Africa to ignore today's realities or wish them away. Indeed, much is happening today that reveals not only challenges, but also the potential that a shift in focus—as recommended by the AMV—could offer.

The experience of the Lagos Plan of Action reminds us that policy design works best when instruments are available to carry it out. For much of Africa, that plan remains part of the rhetoric of official declarations, dissociated from real policy. Such policy—discernible in budget statements,

mining legislation and agreements as well as similar instruments—has often expressed either short-term responses to immediate concerns or maintained a focus on extracting and exporting unprocessed natural resources.

The institution of mining as an enclave was the result of a particular phase of Africa's history, but should not be taken as an inevitable part of its destiny. The AMV and this report propose that the continent faces up to the challenge of working towards its "new directions". This will require looking beyond the limiting horizon of its colonial and recent history and embracing the AMV as part of a planned process of sustainable long-term development.

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# Appendices

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## Appendix B :Summary report on the Big Table meeting, 2007

### Managing Africa's Natural Resources for Growth and Poverty Reduction

1 February 2007

#### Summary Report

##### *I. Background*

1. The 2007 Big Table which was organized jointly by the Economic Commission for Africa (ECA) and the African Development Bank (AfDB) took place at the United Nations Conference Centre (UNCC) in Addis Ababa, Ethiopia on Thursday, 1 February 2007. The Executive Secretary of ECA, Mr. Abdoulie Janneh, and the AfDB President, Mr. Donald Kaberuka jointly chaired the meeting. The meeting brought together Ministers and senior officials from eleven African countries and high-level representatives from four Organization for Economic Cooperation and Development (OECD) countries, and regional and international organizations (ECA, AfDB, AUC, IMF, OECD-DAC, and World Bank). Also in attendance were representatives from research centres, the private sector, and NGOs. The agenda for the meeting and the full list of participants are attached.

2. The 2007 Big Table sought to advance discussions on the challenges of effectively managing Africa's natural resources for growth and poverty reduction on the continent. It also discussed an agenda for future action.

3. A keynote presentation on "The Challenge of Effective Management of Natural Resources for Growth and Poverty Reduction in Africa" was made, to set the stage for the discussion in the ensuing sessions. It provided information on a number of issues pertaining to Africa's mineral resources and production and their optimal management.

4. The informal setting of the Big Table led itself to a frank and honest exchange of ideas on five main themes pertaining to natural resources: Governance; Ownership, Participation and Intergenerational Equity; Bargaining Power, Value and the Role of Emerging Global Actors;

Environmental Stewardship; and Capacity, Partnerships and Regional Integration.

##### *II. Highlights of the discussion*

##### **1. Natural Resources Governance**

5. The meeting noted that natural resources exploitation can contribute to growth and development in Africa. For this to happen, sound governance systems, capacity to administer and monitor the sector, and better linkages between the natural resources sector and other sustainable sectors of the local economy are required.

6. Participants agreed that a concerted approach to address issues of transparency in the natural resources sector needed to be implemented under the African Peer Review Mechanism of the New Partnership for Africa's Development (NEPAD/APRM). It was further recommended that APRM should be strengthened and expanded to incorporate natural resources governance (including revenue transparency) as a key governance performance indicator. It was found equally relevant to develop African codes of conduct and guidelines on natural resources exploitation, particularly on safety, health and environmental practices (SHE). The Extractive Industries Transparency Initiative (EITI), the Organization for Economic Cooperation and Development (OECD) guidelines, the Equator Banks Principles, the Global Reporting Initiative (GRI), and other similar instruments could inform this process.

7. Several natural resource-rich countries are also fragile States. Hence, it was underscored that tools such as the Kimberley Process Certification Scheme, the OECD Guidelines, and EITI are important safeguards to ensure good practice by hosting governments and investors. Hence, the meeting underscored the importance of endorsing and expanding the EITI by addressing upstream and downstream issues (such as licensing, procurement,



ownership, corporate social responsibility, sustainable development, etc.). Participants therefore called for more countries to adhere to the EITI, and for the G-8 countries to endorse it. It was also noted that the Kimberley Process Certification Scheme should be extended to other minerals such as gold, columbite-tantalite (coltan), etc. in order to break the link between conflict/criminality and natural resources.

8. It was further agreed that the existence of an oversight mechanism was crucial. To that effect, it was noted that non-state actors such as parliaments and civil society organizations (CSOs) should be empowered.

## **2. Ownership, Participation and Intergenerational Equity**

9. The concept of ownership of natural resources projects has evolved to include local communities as important stakeholders. It was underlined that local communities should participate in the planning and development of natural resources projects to ensure that a lasting social contract will operate.

10. Furthermore, ownership and participation should also be evaluated in terms of local supply chains and employment of the local community in natural resources projects, as well as the stimulation of local companies to service the projects.

11. Participants stressed the need for a new dispensation in contract negotiations and for the formulation of appropriate laws with regards to ownership and local participation. These would require government, companies, and civil society representatives to be equipped with a new set of skills.

12. The Big Table further underscored that strategies such as the Mining Charter and Black Economic Empowerment mining (BEE) of South Africa could offer empowerment models for local participation that could be replicated elsewhere in Africa. In this regard, AfDB was requested to look at methods of stimulating the growth of African Junior Resource Companies (JRCs) in order to secure long-term socio-political sustainability.

13. The meeting observed that corporate social responsibility is entrenched as a business practice of some natural resources companies. However, it also noted that, particularly in fragile states, some natural resources companies were not observing the highest corporate standards. To address these challenges, the meeting recommended that EITI, OECD, and apex bodies such as the International Council on Mining and Metals (ICMM) should deploy greater efforts in disseminating their conduct and enforcing their application. The meeting also noted that the involvement of the AfDB in natural resources projects served as a tool to enforce adherence to international standards by project operators. It was recommended that this trend should be maintained.

14. The meeting also emphasized the importance of diversifying natural resources sectors throughout the value chain to ensure sustainability, particularly for finite mineral resources. This could be achieved through the promotion of local beneficiation and value-addition, fomenting the local inputs industry, and investing natural resources' wealth in other sustainable activities, including financial assets, infrastructure and human resources development.

15. With regards to the use of Stabilization Funds and Non-renewable Resource Funds (NRFs) including Future Generation Funds, the meeting noted that they had the potential to insulate economic activity from fluctuations in commodity prices, address inter-generational issues, encourage fiscal discipline, and protect local economies against inflationary pressures from windfalls (Dutch disease). However, the Big Table observed that the Funds are not a panacea, and that instituting an appropriate public financial management framework for savings and investment such as medium-term fiscal planning could achieve the same objectives.

16. The meeting observed that in Africa, political pressure as well as the immediacy and enormity of the development challenges, including achieving the MDGs, could lead to such Funds being raided, thus defeating the purpose of their establishment. To reduce these risks, it was underlined that there was a need to establish independent, competent and accountable entities to ensure proper management and oversight of these Funds. The



meeting also highlighted the need to divulge information about the Funds and exchange experiences on their application. To improve performance in the sector, it was further suggested that African countries could learn from positive experiences in managing natural resources wealth in Africa, notably in Botswana. Equally important are experiences from countries such as Norway and Canada, which have been successful in using natural resources funds to fuel their growth and development.

17. It was also noted that there should not be a dichotomy between the interests of current and future generations. Instead, participants agreed that the issue should be how to invest wisely to balance both interests. Participants also recognized that it was important for Africa to strengthen its capacity to harness renewable resources with a view to preserving part of the stock of non-renewable resources for future generations.

18. The meeting also recognized the importance of addressing the interests of resource-poor and resource-rich regions within the same country, and of promoting gender equity in the use of the proceeds of natural resources exploitation. To reduce the potential for conflict, there is need to develop a formula for the equitable distribution of benefits and wealth between resource-rich and resource-poor regions. This can be informed by relevant experiences in Africa and beyond.

### **3. Bargaining Power, Natural Resources Value, and the Role of Emerging Global Actors**

19. The Big Table recognized that, historically, Africa had not gained the best possible benefits from the exploitation of its natural resources. In the 1990s, this was further compounded by African efforts to attract FDI to their natural resources sector, which led to the formulation of overly generous investment laws and regulations. The meeting further observed that the scale of reforms in Africa did not have any historical precedent.

20. However, the meeting noted that there has been a paradigm shift in the 2000s with a surge towards a more societal-oriented development. In addition, it was observed that the natural resources sector is witnessing a commodity price boom, fuelled by global resource

scarcity and the entrance in the commodity market of new global resource-demanding players such as China and India. Given Africa's unique resource endowment, this offers a window of opportunity for African States to extract better terms from natural resources exploitation and to catalyze growth and poverty alleviation across the continent. For this to happen, the meeting emphasized the importance of building the negotiating capacity of African countries. In this context, it recommended the establishment of a facility to help African countries develop skills and expertise in such contract negotiations.

21. The meeting also underscored the fact that natural resources companies were global, that the industry was cyclical, and that there was competition for capital, especially from equally endowed continents such as Latin America. Thus, the need for the creation of an enabling environment, modern legal and regulatory frameworks, and competitive fiscal regimes was underlined. Additionally, the Big Table also recognized the importance of reviewing the current generation of natural resources laws and regulations to better accommodate the interests of African countries. This could be informed by practices from the oil/gas sector, such as auctioning of blocks and product sharing agreements. The international community and leading research centres in natural resources policy and law were called upon to help in this effort.

22. The meeting confirmed that Africa's highest short-medium term potential lies in its mineral resource endowment. It also observed that most African countries are poorly surveyed and do not have good information about their mineral resources potential. It was agreed that for Africa to extract better terms in its negotiations with partners and enter into equitable deals, it has to have a good geological database and inventory of its mineral resources. This requires urgent and substantial investment in geological mapping and mineral inventory. African governments and the international community, in particular regional and international financial organizations, are encouraged to fund this effort.

23. The meeting also noted that there are recent examples in Africa where natural resources exploitation led to infrastructure development. It underscored that these practices should be replicated throughout the continent.

In this respect, the meeting endorsed NEPAD's Spatial Development Programme (SDP), where, due to their greater differential rents, mineral and energy projects anchor infrastructure development in Africa, thus underpinning the viability of infrastructure projects, which could then underpin the development of other sustainable sectors such as agriculture, tourism, and resource-based manufacturing. The meeting urged the NEPAD Secretariat to raise awareness about the potential of SDPs and to scale-up their implementation.

24. While recognizing that Chinese and Indian companies might not be subject to the same checks and balances and corporate social charters as their counterparts from the West, the meeting underscored the importance of engaging with them; understanding their motivation, business practices, culture, and investment drivers. This was considered important since these countries represent an alternative source of capital and are global players in their own right. The meeting recognized that this should result in a better compact where development outcomes would be maximized. The importance of strengthening the individual negotiating capacity of African States, as well as that of the continent as a block to achieve this was reiterated.

25. The Big Table observed that Africa's traditional partners have not always supported the continent's effort to promote local processing and value addition. They noted that tariff and non-tariff barriers imposed by the West curtailed Africa's efforts in this direction. It was noted that this issue should be addressed during the Doha Round of negotiations and during the Economic Partnership Agreements (EPAs) negotiations. African Caribbean and Pacific (ACP) countries were urged to place this issue high on their agenda for negotiations with EU.

26. Overall, the meeting noted that it was important to integrate the natural resources sector in national development plans and strategies such as the Poverty Reduction Strategy Papers (PRSPs) if the sector is to better contribute to growth and development. Therefore, the meeting recommended that the natural resources sector should be mainstreamed in all the PRSPs.

#### 4. Natural Resources Exploitation and Environmental Stewardship

27. The meeting noted that environmental considerations were moving to the top of the political agenda and that they were now central to considerations in natural resource industries. It further observed that lending institutions such as the AfDB, World Bank, and international industry associations such as the ICMM could play a role in enforcing environmental compliance in Africa. It was further noted that Africa should develop its own resource exploitation SHE codes, aligned with international best practice.

28. The meeting underscored that environmental issues were not solely the realm of governments and that, increasingly, local communities and other stakeholders should be involved in monitoring and enforcing environmental compliance. It was highlighted that there was need for more advanced and standardized systems to monitor compliance with rules and regulations. This could be implemented through self-monitoring systems or by the creation of tripartite governance structures that would include governments, civil society organizations and private companies. In addition, information about the International Organization for Standardization (ISO) 14000 standards for environmental compliance should be better disseminated and capacity built to ensure their wider application.

29. The meeting noted that the global market did not provide enough mechanisms to enforce environmental stewardship. It also observed that environmental trading systems and mechanisms such as the Carbon Trading System, the Clean Development Mechanism, and the Global Environment Fund were not widely known by African countries. The meeting recommended that the international community, in particular the G-8, countries should step up efforts to disseminate information about these tools and build the capacity of African countries to use them. It was also stressed that capacity-building was needed for government institutions, NGOs and community based organization (CBOs) to better monitor and enforce application of laws, regulations and environmental standards.

30. The meeting agreed on the need to expand the mandate and scope of EITI to include environmental stewardship.

### **III. Crosscutting Issues**

#### **5. Capacity for Natural Resources Management, Partnerships and Regional Integration**

31. While acknowledging the various initiatives taken to build the capacity of African countries to manage natural resources, the meeting identified some gaps, including the lack of capacity to negotiate contracts. The need to establish a facility to help African countries better negotiate contracts was reiterated. In addition, the establishment of a peer learning group on natural resources management to promote capacity-building, exchange of experiences, identification and dissemination of best practices, and creation of an appropriate knowledge base was considered a priority.

32. The meeting noted that AfDB was conducting a survey to identify capacity gaps in Africa. This would be instrumental in designing tailor-made and targeted capacity-building programmes for government officials, oversight bodies such as Parliaments, Chambers of Mines, and other stakeholders. A special area of concern is the need to enhance understanding of fiscal issues in natural resources contracts and accounting practices of international companies operating in the sector. The meeting underscored that the AfDB survey could help map existing capacity-building initiatives in the region to improve co-ordination and avoid duplication of efforts.

33. The importance of finding ways to avert brain-drain, which affects the existing capacity, was also highlighted. In this context, it was suggested that existing centres of excellence in Africa should be strengthened and more should be created.

34. Regarding regional integration, the necessity of building the capacity of existing regional economic communities (RECs) and/or building them in different ways that take cross-border issues into account when resources and infrastructure are not wholly within one country was emphasized. Moreover, the importance of collaborating

and creating partnerships for large projects in the region (e.g. SDPs) was underlined.

35. The meeting also noted that RECs should pay urgent attention to the harmonization of laws, regulations and standards in their respective sub-regions. This was considered key to facilitating factor flows, especially capital, human resources, goods and services. The meeting also noted that some environmental problems are trans-boundary and require regional and sub-regional approaches to address them.

36. Also recognized was the need to build or strengthen partnerships and coalitions at national, regional and international levels with the aim of strengthening existing capacities, inducing change, and enforcing application of international treaties, agreements, and standards to promote good governance and an efficient use of natural resources wealth, and to reduce the possibility of conflicts.

### **IV. Conclusions and Way Forward**

37. The meeting agreed that Africa's huge natural resources endowment could engender growth and multiplier effects on the continent, if properly managed. This hinges on ensuring Africa's ownership of the development process, strengthening governance systems, reinforcing institutional capacity, investing natural resources wealth in the creation of knowledge for economic innovation, negotiating better terms with external partners, and integrating the natural resources sector into national development frameworks. It was recognized that many natural resources are finite, and the wealth they generate should be invested in other forms of capital, particularly human, social and physical. The potential of using natural resources rents to promote Africa's infrastructure development was recognized. As a way forward, the following compact for future action was agreed:

- (a) Require G-8 endorsement of EITI and encourage more African countries to adhere to and implement the principles;
- (b) Expand the mandate and scope of EITI and beyond the oil and gas sectors and revenue

transparency to include other natural resources, upstream and downstream issues, and environmental stewardship. The EITI Board should consider this;

(c) Extend the Kimberley Process Certification Scheme to other minerals such as gold, coltan, etc.;

(d) Expand the scope of the APRM process to include governance of the natural resources sector. It is proposed that the NEPAD Heads of State and Government Implementation Committee should consider this matter.

(e) Encourage the establishment of independent oversight bodies to monitor implementation of natural resources projects at the country level. This could include representatives of NGOs, CBOs, and the private sector;

(f) Mainstream the natural resources sector into the second generation PRSPs in African countries. This would require concerted action between national governments, the AfDB, World Bank, UNDP, and other stakeholders, ECA's database from the PRSP Learning Group could inform this process;

(g) Build Africa's capacity to utilize environmental trading systems and mechanisms such as the Carbon Trading System, the Clean Development Mechanism and the Global Environment Fund. The international community should help in this exercise;

(h) Encourage AfDB and other regional and international financial institutions to participate in natural resources projects in Africa. Their presence serves as a guarantee that project operators will respect international standards;

(i) Facilitate the development of African Junior Resource Companies, possibly through a dedicated finance instrument under the AfDB. This could contribute to an increase of local

participation in and ownership of natural resources projects;

(j) Strengthen Africa's capacity to harness renewable resources as a means to preserving the stock of non-renewable resources for future generations;

(k) Devise mechanisms for sharing benefits between regions in the same country based on tested formulae;

(l) The establishment of a study group to review Africa's mining codes. This could include research centres in Africa and abroad, ECA, AfDB, ICMM, the Commonwealth Secretariat, and OECD-DAC;

(m) An AUC/AfDB/ECA programme to elaborate Africa codes and standards for natural resources exploitation (To be informed by OECD Guidelines, EITI, Equatorial Banks Principles, Global Reporting Initiative, ISO, etc). This could have an impact on AfDB's lending guidelines;

(n) The establishment by AfDB of a grant facility to help Africa's emerging oil and other natural resources producers in contract negotiations;

(o) The establishment by ECA of a peer-learning group on natural resources management. The work streams of this group would include seminars/workshops on oil/gas exploitation, management of mineral wealth, natural resources and infrastructure development, Stabilization Funds and Non-Renewable Funds, compendia of best practices, policy briefs, e-discussion groups, etc.;

(p) Tailor-made and targeted capacity-building programmes in the key areas of management of natural resources funds and windfalls, monitoring and enforcement of environmental obligations, taxation, and accounting procedures of international natural resources companies. The target group would include government officials,

oversight bodies such as Parliaments, Chambers of Mines, and other stakeholders;

(q) Undertake better profiling of emerging global players such as China and India and engage them. This could include research centres in Africa and abroad, ECA, AfDB, UNCTAD, ICMM, the Commonwealth Secretariat, and OECD-DAC;

(r) Build or strengthen partnerships and coalitions at national, regional and international levels with a view to improving information sharing and dialogue, co-ordination and collaboration, and enforcing application of international treaties, agreements, and standards to promote good governance as well as an efficient use of natural resources wealth;

(s) Call on the international community to support Africa's effort to map and create inventories of its natural resources. This could impact on Africa's capacity to obtain better terms and could lead to the establishment of an African Natural Resources Information Clearing-house. (This

would have information about Africa's resources, production and consumption, market dynamics, etc);

(t) Scaling-up awareness-raising programmes on the potential of SDPs in Africa. This could culminate in an international conference on infrastructure and natural resources development in Africa (2009). The AfDB, the Infrastructure Consortium for Africa, AUC, NEPAD Secretariat, ECA, and the Regional Spatial Development Initiatives Programme (RSDIP)/Mintek could be involved in this process;

(u) Maintain the momentum created by the 2007 Big Table through a co-ordinated series of follow-up events, including a discussion with Ministers of Finance during the next Annual Meeting of the AfDB; and

(v) Develop a scorecard to measure impact and degree of implementation of recommendations agreed upon in these fora.

## Appendix C: Terms of reference of the ISG

### International Study Group to Review Africa's Mining Regimes

#### Background

The mineral wealth of a considerable number of countries of Africa and its potential as a stimulus to economic growth and development has been eloquently documented. Moreover, increased attention has been directed to the role which mineral wealth might potentially play, in the face of difficulties facing other potential leading economic sectors, notably agriculture (price instability, subsidies, etc).

The 2007 Big Table on "Managing Africa's Natural Resources for Growth and Poverty Reduction" jointly organized on 1 February 2007 by the Economic Commission for Africa (ECA) and the African Development Bank (AfDB) recognized that, historically, Africa had not gained the

best possible benefits from the exploitation of its natural resources. The meeting noted that in the 1990s, many African countries embarked on a scale of reforms - which did not have any historical precedent - and formulated generous investment laws and regulations to attract foreign direct investment (FDI) to their natural resources sector. The meeting also observed that there has been a paradigm shift in the 2000s with a surge towards a more societal-oriented development. In addition, the Big Table noted that the natural resources sector is witnessing a commodity price boom, fuelled by global resource scarcity and the entrance in the commodity market of new global resource-demanding players such as China and India. Given Africa's unique resource endowment, this offers a window of opportunity for African States to extract better



terms from natural resources exploitation and to catalyze growth and poverty alleviation across the continent.

In view of the above factors, it appeared most appropriate and urgent to evaluate past experiences in natural resources development in Africa and put forward recommendations as to how mineral rich countries of Africa might best ensure that their natural resources contribute to the economic and social development of their societies in a sustainable and equitable manner. To achieve this, the Big Table recommended the establishment of a study group to review Africa's mining regimes.

### Objectives

The overall objectives of the International Study Group (ISG) are to review the extent to which Africa's current mining regimes promote sustainable development of the mining sector, including artisanal and small-scale mining as well as the broad national and regional economy, and to propose key elements for future change in the form of templates, toolkits and guidelines to formulate the next generation of Africa's mining regimes. For the purpose of this review, a broad view is taken of the expression "mining regime". It includes policy statements, legislation and regulations, contracts, guidelines, codes of conduct, standards, operating practices, and international agreements applicable to mineral operations.

Key sustainable development objectives to be taken into account include the following:

1. To secure national and regional policy space to develop regimes and options that advance developmental goals and are sensitive to national specificities;
2. To develop governance institutional capacity to be able to customize mining regimes to suit local developmental needs;
3. To ensure that the minerals socio-economic linkages into the local and regional economy are optimized; and
4. To develop multilateral and regional governance and regulation through e.g. the African Peer Review

Mechanism (APRM), the Extractive Industries Transparency Initiative (EITI), and the Regional Economic Communities (RECs).

### Issues to be covered

To assist in the formulation of a framework for mineral resource development, the following issues, inter alia, will be considered.

governance and institutional capacity in the mineral resources sector;

- mechanisms for enhancing the integration of mineral operations into the broader national or regional economy;
- mechanisms for enhancing local benefits;
- mechanisms for enhancing local and national employment;
- managing and allocating mining revenue;
- land and community rights and relations;
- gender and child labour in the context of mineral operations;
- global trade and other economic issues affecting the African mining sector; and
- security of supply.

The study will evaluate and, where judged desirable, develop instruments regarding the following:

- the types of licences required for mineral operations and their incidents;
- the conditions to be satisfied for obtaining each licence;
- the processes by which these may be acquired or granted, including access to information, who makes

or participates in the decision to make a grant, who is consulted and how a decision is made;

- specifically, when environmental permits or licences are required; of what sort; after what processes; and what obligations they impose;
- procedures for assessing and regulating social impacts;
- land tenure: the relationship between the general regime and the mining regime; the impact of mining operations on other interests in land;
- the various elements of the fiscal regime;
- financial regulations, including exchange control;
- local retention of earnings from mining;
- security of tenure provisions: their scope, formulation, location and implications;
- dispute-settlement provisions;
- agreements for selling, refining or processing minerals;
- permits and processes for exporting minerals;
- industry and State reporting requirements;
- planning for mine closure including environmental, social and economic aspects of closure; and
- regulatory and monitoring institutions: their respective roles, responsibilities, powers, capacities.

**An organising map for the range of issues set out above is attached as Annex 1.**

### **Activities /Outputs**

From the perspective of sustainable development:

- produce a comprehensive and up-to-date compilation and database of the principal elements of the regimes governing mineral operations in Africa;
- provide an overview of the key elements of these regimes;
- summarise any trends that they reveal;
- make a comparison with developments in other mineral-producing regions of the world and identify best practices;
- identify evident weaknesses as well as best practices in the African regimes;
- produce case studies and profiles of selected African countries;
- identify constraints from the international environment;
- indicate major issues in controversy or of concern, known facts and positions on these issues and either make recommendations to resolve them or suggest what further work needs to be done to advance informed resolution;
- develop a toolkit to assist policymakers and government negotiators involved in formulating, implementing, or monitoring a regulatory regime or in negotiating agreements for mineral operations;



- develop reporting requirements directly linked to scorecards for monitoring performance, and measuring progress and impacts;
- produce a report synthesizing key findings of the study and recommendations for action;
- draft a declaration on key policy positions to be considered for adoption by African governments; and
- draw up proposals for processes to disseminate the outcomes.

### Implementation strategy

An international study group comprising of leading academics and practitioners of natural resources law, economics and management will conduct the review of Africa's mining regimes.

An inception meeting will be organized in October 2007 to (i) agree on the project governance, methodology, theoretical or conceptual framework of the study (what should be the subject of study and research) and work streams, (ii) clarify what sustainable development and societal-oriented development means for the purpose of the study with a view to firming-up the criteria for study and comparison, (iii) identify roles and assign responsibilities to the members of the group, and (iv) decide on the deliverables, expected outcomes, and timelines. Members attending the inception meeting will assure the overall quality control of the review exercise.

The review will be conducted through desk studies and bibliographic review, assessment of perceptions of key stakeholders on legal/regulatory, economic/fiscal, environmental/social, and institutional/governance issues affecting the sector, case studies, selected country profiling including risk profile, governance in the sector, availability of detailed geological information, the status of the authorities involved in giving licenses, the geological surveys, etc. The preliminary results of the review of Africa's mining regimes will be subjected to peer reviews and validation exercises at national and sub-regional levels involving different stakeholders, including members of parliament (e.g. the e-parliament forum, NGOs, the

private sector, industry associations, labour, international organizations, and academia.

### Guiding principles

The review exercise will be guided by the following principles:

- Sensitivity to Africa's aspirations and expectations;
- Independent, fact-driven, and balanced evaluation;
- Appreciation of concrete circumstances and features of particular countries;
- Acknowledgement of the global and competitive nature of the mining industry; and
- Need to engage in meaningful consultations with a wide range of stakeholders.

### Key milestones

- "Commissioning" of studies: Start in mid- October 2007-10-09
- Briefings on the work of the ISG: First African Union Conference of Ministers Responsible for Mineral Resources Development, which will be held in Addis Ababa, Ethiopia from 19-23 November 2007.
- Next Meeting of the ISG: 14-16 April 2008 in Addis Ababa, Ethiopia.
- Sub-regional road shows and validation workshops: 3rd Quarter of 2008
- Conclusion of the review exercise: 30 June 2009

### Partners

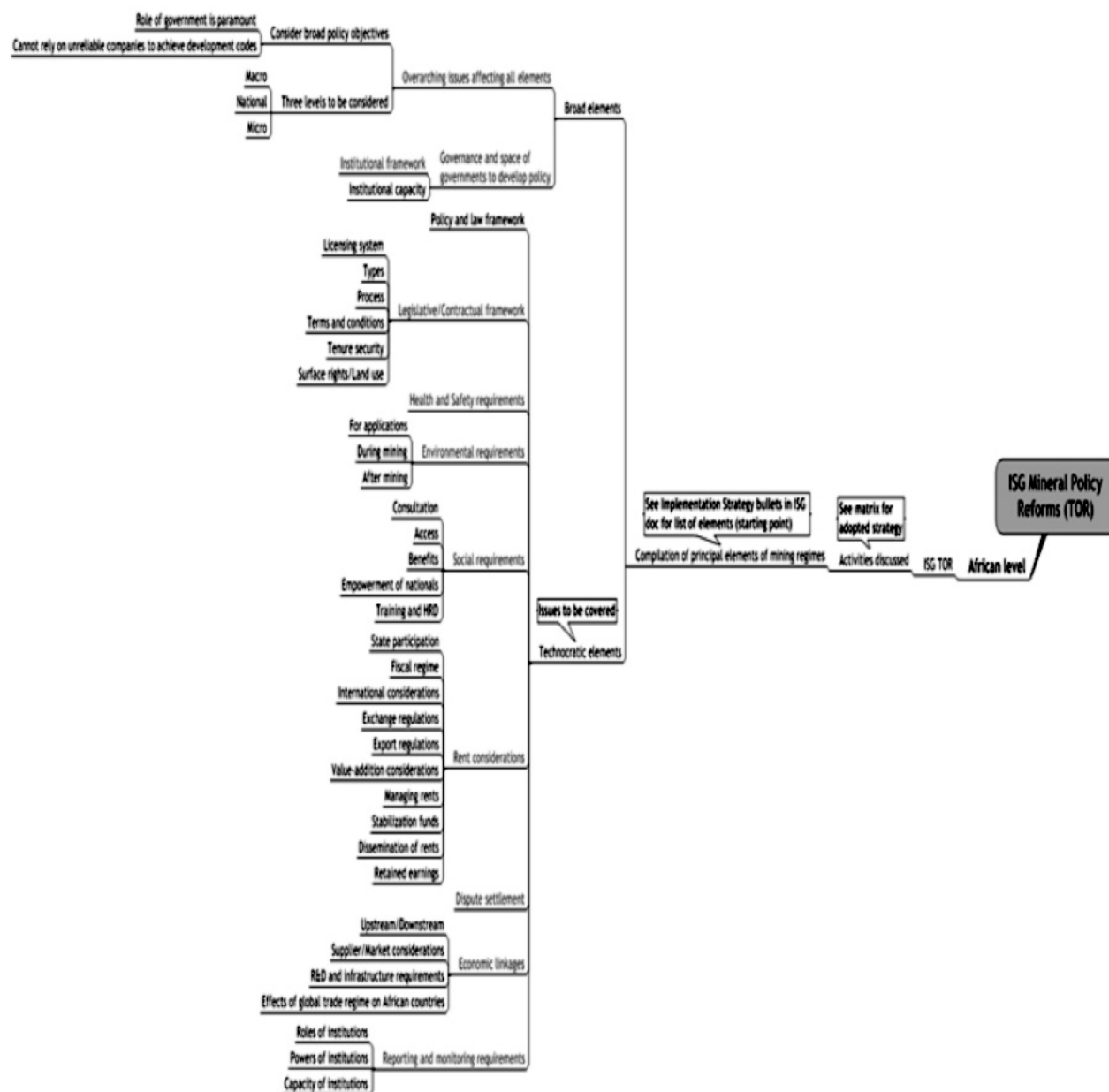
This activity will be implemented in collaboration with the Centre for Energy, Petroleum and Mineral Law and Policy (CEPMLP) of the University of Dundee, the Groupe de recherche sur les activités minières en Afrique (GRAMA) of the Université du Québec à Montréal (UQAM), the

Witwatersrand University, the Commonwealth Secretariat, the Raw Materials Group and other partners who will be sought to provide resource persons and materials to develop case studies, guidelines and the toolkits.

## Expected accomplishments

It is expected that this activity will generate a body of knowledge and practices on Africa's mineral regimes that will contribute to the drafting of a future generation of mining codes that promote broader-based growth and development of the mining sector on the continent.

## ISG ToR: Mind Map



## Appendix D: Extracts from the Lagos Plan of Action for the Economic Development of Africa (1980 -2000)

### Preamble

9. We view, with disquiet, the over-dependence of the economy of our continent on the export of basic raw materials and minerals. This phenomenon had made African economies highly susceptible to external developments and with detrimental effects on the interests of the continent.

### Natural resources

76. The major problems confronting Africa in the field of natural resource development include: lack of information on natural resource endowment of large and unexplored areas and the activities of transnational corporations dealing with natural resource assessments; lack of adequate capacity (capital, skills and technology) for the development of these resources; a considerable dependence on foreign transnational corporations for the development of a narrow range of African natural resources selected by these corporations to supply new material needs of the developed countries; the inadequate share in the value added generated by the exploitation of natural resources of Member States due to imperfect pricing and marketing practices; non-integration of the raw materials exporting industries into the national economics of the Member States thus impeding backward and forward linkages; extremely low level of development and utilisation of those natural resources of no interest to foreign transnational corporations; and disappointingly low general contribution of natural resources endowment to socio-economic development. Because of these factors Member States are unable to exercise meaningful and permanent sovereignty over their natural resources.

77. During the 1980s the strategy for the developing countries of Africa in their natural resources development should aim at:

(a) undertaking the assessment of their natural resources endowments and the use of the information on natural resource distribution and availability for national and African multinational socio-economic development projects

intended to produce goods and services to meet the needs of Member States;

(b) integrating natural resource development within national and African multinational socioeconomic development programmes and projects, so as to encourage complementarity of different natural resources available in various Member States in the production process and to promote backward and forward linkages that the development of the natural resources can generate within the African economics;

(c) undertaking comprehensive manpower, technology and capital needs surveys for natural resource development activities with a view to enabling the countries to pool their resources for the implementation of national and African multinational natural resource development programmes and projects;

(d) strengthening existing national and African multinational institutions dealing with natural resource development and conservation activities at all levels including training, research, production, processing, fabrication, marketing, finance, etc., and the establishment of new ones;

(e) harmonising national natural resource development policies with a view to creating a favourable environment for co-operative efforts by the Member States in the development of their natural resources to meet socio-economic needs of their peoples; and

(f) working closely with the international community and other non-African agencies involved in natural resource development in the region, so that external resources are directed principally to natural resource development projects which promote and sustain cooperative arrangements among Member States so as to enable the region to obtain the fullest possible development benefits flowing from regional linkages.

## General proposals and recommendations

78.

(i) In recognition of the significance of natural resources in providing a sound base for national socio-economic development, Member States should take early steps to acquire a thorough knowledge of their natural resource endowments. These include the establishment of a manpower development and institution building programmes for the conduct of field studies and preparation of inventories of natural resources.

(ii) Member States whose economy essentially depends on production of raw materials should endeavour to co-ordinate and harmonise their positions in all international negotiations on raw materials so as to protect their interests.

(iii) In particular measures should be taken by each Member State to ensure that all results and basic data, especially foreign transnational companies during their mineral prospection activities in the country, are handed over to the government.

(iv) To ensure the best possible storage and utilisation of these data, a documentation centre (data bank) should be established at the national level.

(v) To enable African governments to exercise sovereignty over their natural resources they should take all necessary measures through the development of relevant human and institutional infrastructure, to establish indigenous technological capabilities in the exploration, processing and exploitation of their natural resources.

(vi) The constant aim of African governments should be the rational development and utilisation of their natural resources, employing technologies that are appropriate to their local conditions, and paying due regard to such aspects as conservation of natural resources.

(vii) At the sub-regional and regional levels measures or policies should be adopted to ensure effective intra-African co-operation among Member States, namely:

(a) harmonisation of national development programmes for the use of mineral, energy and water resources;

(b) establishment of joint facilities for applied research, specialised services and training;

(c) participation in multinational projects and enterprises for the exploitation, production and processing of usable natural resources.

Mineral resources

79. The main development objectives of the strategy for development of mineral resources during the 1980s would be:

(i) Improved knowledge of African mineral resources through possession of an adequate inventory of existing and potential resources, better forecasting of consumption patterns and research towards rational use of known reserves. Particular attention should be paid to those mineral raw materials with strategic importance for building up the basic industries making up intermediate products such as: iron and steel, aluminium, base metals, petrochemical products and fertiliser, cement, etc. In the economic evaluation of the resources account should be taken of the structural changes which have occurred in the world due to the effect of the energy crises, the new technologies as well as the increased needs for local consumption of some raw materials.

(ii) Creation, at the national and regional levels, of proper scientific, technical and industrial environment necessary for the development and expansion of the mineral extractive industries. To this end, the first effort should be directed towards the strengthening of the capabilities of the national geological surveys and mining departments. In promoting the new methods and techniques of research the national capabilities have to be complemented by the multi-national African centres for development of mineral resources.

(iii) Correlation of national programmes of geological research and mineral surveys at the subregional and regional levels in view of increased efficiency and establishment of joint operational activities. Of particular importance will be co-operation among the Member States for exploitation of the resources of the sea-bed.

(iv) Training in all aspects of mineral resources development of high level specialized personnel as well as of medium level technicians from Member States in order to alleviate the shortage of qualified manpower and to reduce the dependence on overseas expertise and specialised services.

(v) Development of a system of transfer of know-how, and exchange of scientific, technical and economic data in geology, mining activities and mineral economics among Member States as well as with countries from other developing regions.

## Appendix E: Main mineral deposits of Africa

COUNTRY	Precious Metals gemstones and semi precious stones	Metallic Minerals	Industrial Minerals
Algeria	Gold, silver	Mercury, wolframite, lead, zinc, iron	Phosphate, barite, kaolin, bentonite, diatomite, feldspar, gypsum, pozzolana, salt, marble, rhyolite, sulphur, fuller's earth
Angola	Diamonds, gold, silver, PGMs,	Uranium, nickel, chromium, bauxite, copper, lead, iron, zinc	Phosphate, granite, marble, salt, gypsum, lignite, mica, peat, manganese
Benin	Gold,		Marble,
Botswana	Diamonds, gold, platinum group metals, semi-precious gemstones,	Copper, nickel, cobalt	Coal, soda ash, salt
Burkina Faso	Gold,	Lead, zinc, uranium	Granite, marble, phosphate, pumice, salt, manganese
Burundi	Gold	Tin, nickel, copper, cobalt, niobium, coltan, vanadium, tungsten	Phosphate, peat
Cameroon	Gemstones, gold, diamonds	Nickel, bauxite, iron., rutile, cobalt, uranium, tantalite, tin.	Lignite, marble, mica, manganese
Cape Verde			Gypsum, , pozzolana, salt,
Central African Republic	Diamonds, gold	Copper, tin, iron, uranium	Clay, graphite, ilmenite, kyanite, lignite, monazite, quartz, salt, manganese, rutile
Chad	Gold		Salt, soda ash,
Comoros			
Congo DR	Diamonds, gold, silver	Copper, zinc, tin, nickel, lead, coltan, cobalt, tungsten, niobium	Coal, manganese
Congo Brazzaville	Diamonds, gold	Copper, lead, zinc, iron, magnesium	Phosphate, potash, manganese
Cote d'Ivoire	Gold, diamonds	Cobalt, niobium coltan, nickel, copper, iron, bauxite,	Manganese
Djibouti		Copper	Salt, basalt, gypsum
Egypt	Gold	Lead, tantalum, uranium, copper, tin, iron, zinc, magnesium,	Granite, marble, phosphate, gypsum, sulphur, salt, soda ash, barite, asbestos, bentonite, feldspar, fluorspar, kaolin, manganese, vermiculite, coal
Equatorial Guinea	Diamonds, gold	Bauxite	
Eritrea	Gold, silver	Copper, lead, zinc, magnesium, iron, nickel	Asbestos, feldspar, potash, talc, basalt, granite, gypsum, kaolin, marble, pumice, quartz, salt
Ethiopia	Gold, silver, platinum, gemstones	Tantalum	Salt, diatomite, feldspar, gypsum, soda ash, granite, marble, pumice, rhyolite, silica sand, kaolin
Gabon	Gold, diamonds, PGMs,	Uranium, niobium, iron	Phosphate, manganese
Gambia, The		Titanium	Rutile, silica sand

COUNTRY	Precious Metals gemstones and semi precious stones	Metallic Minerals	Industrial Minerals
Ghana	Gold, diamonds, silver	Bauxite	Salt, manganese
Guinea	Gold, diamonds	Bauxite, iron, uranium, copper, nickel	Salt, graphite, manganese
Guinea-Bissau	Diamonds, gold	Bauxite	Granite, phosphate
Kenya	Gemstones, gold	Lead, zircon, iron, titanium	Soda ash, fluorspar, diatomite, salt, gypsum, mica, meerscham, kaolin
Lesotho	Diamonds	Uranium	Dimension stone, bituminous shale, coal
Liberia	Diamonds, gold	Iron	
Libya		Iron	Gypsum, salt, sulphur,
Madagascar	Gemstones, diamonds, PGMs, gold	Chromium, nickel, bauxite, copper, cobalt, titanium, uranium, iron	Coal, graphite, labradorite, quartz, agate, salt, gypsum, feldspar, mica, marble, zircon, beryl
Malawi	Gemstones	Copper, nickel, titanium, uranium	Coal, kaolin, phosphate, zircon
Mali	Gold, diamonds, palladium, silver, semi-precious stones	Copper, lead, lithium, nickel, tin, iron, chromium, titanium, tungsten, uranium, niobium, thorium, bauxite.	Granite, gypsum, kaolinite, marble, phosphate, salt, manganese, rutile, talc, zircon
Mauritania	Gold, diamonds, semi-precious stones, PGMs	Iron, copper, chromite, titanium	Gypsum, salt, sulphur
Mauritius			
Morocco	Gold, silver	Lead, zinc, copper, nickel, tin, uranium, mercury, cobalt, antimony, iron	Phosphate, coal, barite, fluorspar, bentonite, salt, talc, fuller's earth, feldspar, gypsum, manganese
Mozambique	Gold, coal, gemstones, diamonds	Bauxite, iron, niobium, tantalum, titanium, beryllium	Diatomite, salt, quartz, Marble, bentonite, rutile, zircon, ilmenite
Namibia	Diamonds, gold, silver, gemstones	Copper, lead, zinc, tin, uranium, tantalite,	Salt, fluorspar, granite, marble, sodalite, wollastonite, manganese
Niger	Gold, silver,	Uranium, tin	Coal, gypsum, salt
Nigeria	Gold, , gemstones, diamondS	Tin, bauxite, copper, zinc, lead, iron, tungsten	Coal, barite, kaolin, feldspar, gypsum, granite, marble, soda ash, talc, zircon, phosphate, rutile, monazite, ilmenite,
Rwanda	Gold, gemstones	Tin, tungsten, tantalum, niobium, columbium	Pozzolana
Sao Tome E Principe			
Senegal	Gold	Iron, titanium	Phosphate, salt, silica sand, rutile
Seychelles			
Sierra Leone	Diamonds, gold, PGMs,	Bauxite, titanium	Gypsum, salt, ilmenite, zircon
Somalia	Gemstones,		salt, gypsum
South Africa	Gold, PGMs, platinum, diamonds, gemstones, palladium	Lead, zinc, bauxite, copper, nickel, iron, chromium, uranium, vanadium, titanium, cobalt, antimony	coal, phosphate, kyanite, vermiculite, fluorspar, ilmenite, silicon, cement, asbestos, bentonite, feldspar, gypsum, kaolin, mica, manganese, rutile, zircon,
Sudan	Gold, silver,	Chromite,	Gypsum, marble, salt, mica, kaolin
Swaziland	Gold, diamonds		Coal, kaolin, talc, soapstone
Tanzania	Gold, diamonds, gemstones, silver, PGMs	Nickel, bauxite, copper, cobalt, uranium	Coal, phosphate, gypsum, pozzolana, soda ash,
Togo	Diamonds, gold	bauxite, zinc, iron	Phosphate, gypsum, marble, manganese, rutile
Tunisia	Silver	Lead, zinc, iron	Phosphate, fluorspar, zinc, barite, gypsum, lime



COUNTRY	Precious Metals gemstones and semi precious stones	Metallic Minerals	Industrial Minerals
Uganda	Gold, diamonds	Copper, tin, lead, nickel, cobalt, tungsten, uranium, niobium, tantalum, iron	Gypsum, kaolin, salt, vermiculite, pozzolana, marble, soapstone
Zambia	Gemstones, diamonds, gold, silver	Copper, zinc, tin, nickel, cobalt, manganese, uranium	Coal, sulphur, feldspar, barite
Zimbabwe	Gold, diamonds, PGMs, palladium, platinum, , silver	Nickel, copper, iron, Chromium, cobalt, uranium	Coal, lithium, vermiculite, phosphate, feldspar, graphite, kyanite, perlite, mica, sulphur, talc, asbestos, barite

*Sources:*

US Geological Survey (Minerals Yearbook): <http://minerals.usgs.gov/minerals/pubs/country/africa.html#ag>

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British Geological Survey 2009; World Mineral Production 2003 – 2007

## Appendix F: U.S. Mineral Materials Ranked by Net Import Reliance - 2010

Commodity	Percent	Major Sources (2006-091)
Arsenic(trioxide)	100	Morocco, China, Belgium
Asbestos	100	Canada
BauxiteandAlumina	100	Jamaica,Brazil,Guinea,Australia
Cesium	100	Canada
Fluorspar	100	Mexico, China, SouthAfrica,Mongolia
Graphite(natural)	100	China,Mexico,Canada,Brazil
Indium	100	China, Canada,Japan,Belgium
Manganese	100	SouthAfrica,Gabon,China,Australia
Mica, sheet (natural)	100	China, Brazil, Belgium, India
Niobium(columbium)	100	Brazil,Canada, Germany, Estonia
QuartzCrystal(Industrial)	100	China,Japan,Russia
RareEarths	100	China,France,Japan,Austria
Rubidium	100	Canada
Strontium	100	Mexico,Germany
Tantalum	100	Australia,China,Kazakhstan, Germany
Thallium	100	Russia, Germany, Netherlands
Thorium	100	United Kingdom, France, India, Canada
Yttrium	100	China,Japan,France
Gallium	99	Germany, Canada, China, Ukraine
Gemstones	99	Israel, India, Belgium, South Africa
Bismuth	94	Belgium, China, United Kingdom, Mexico
Platinum	94	South Africa, Germany, United kingdom, Canada
Antimony	93	China, Mexico, Belgium

Commodity	Percent	Major Sources (2006-091)
Germanium	90	Belgium, China, Russia, Germany
Iodine	88	Chile, Japan
Rhenium	86	Chile, Netherlands
Diamond (dust, grit and powder)	85	China, Ireland, Russia, Rep. of Korea
Stone (dimension)	85	Brazil, China, Italy, Turkey
Potash	83	Canada, Belarus, Russia
Cobalt	81	Norway, Russia, China, Canada
Titanium Mineral Concentrates	81	South Africa, Australia, Canada, Mozambique
Silicon Carbide	77	China, Venezuela, Netherlands, Romania
Zinc	77	Canada, Peru, Mexico, Ireland
Barite	76	China, India
Tin	69	Peru, Bolivia, China, Indonesia
Vanadium	69	Rep. of Korea, Czech Republic, Canada, Austria
Tungsten	68	China, Canada, Germany, Bolivia
Silver	65	Mexico, Canada, Peru, Chile
Titanium(sponge)	54	Kazakhstan, Japan, Ukraine, Russia
Peat	59	Canada
Palladium	58	Russia, South Africa, United Kingdom, Belgium
Chromium	56	South Africa, Kazakhstan, Russia, China
Magnesium Compounds	53	China, Austria, Canada, Brazil
Beryllium	47	Kazakhstan, Kenya, Germany, Ireland
Silicon (ferrosilicon)	44	China, Russia, Venezuela, Canada
Lithium	43	Chile, Argentina, China
Nickel	43	Canada, Russia, Australia, Norway
Nitrogen(fixed),Ammonia	43	Trinidad and Tobago, Russia, Canada, Ukraine
Aluminium	38	Canada, Russia, China, Mexico
Magnesium Metal	34	Canada, Israel, China, Russia
Gold	33	Canada, Mexico, Peru, Chile
Copper	30	Chile, Canada, Peru, Mexico
Mica,scrapandflake(natural)	27	Canada, China, India, Finland
Garnet (Industrial)	25	India, Australia, China, Canada
Perlite	25	Greece
Salt	24	Canada, Chile, Mexico, The Bahamas
Vermiculite	22	China, South Africa
Sulfur	17	Canada, Mexico, Venezuela
Gypsum	15	Canada, Mexico, Spain
Phosphate Rock	15	Morocco
IronandSteelSlag	10	Japan, Canada, Italy, South Africa
Cement	8	China, Canada, Republic of Korea, Thailand
Iron and Steel	7	Canada, European Union, China, Mexico
Pumice	7	Greece, Turkey, Iceland, Mexico
Diamond (natural industrial stone)	3	Botswana, South Africa, Namibia, India
Lime	2	Canada, Mexico
Stone (crushed)	1	Canada, Mexico, The Bahamas

Note: Excludes mineral fuels. <sup>1</sup> In descending order of import share.

SOURCE: USGS, Mineral Commodity Summaries, 2011, Updated: February 2011

## Appendix G: State/private control of mining of selected minerals 1975-2006

Mineral	Entity	Controlled share of world production %					
		1975	1984	1989	2000	2005	2006
Bauxite	MEC states	17.4	24.8	26.7	18.7	13.5	13.1
	CPEs	14.3	13.1	11.6	5.8	10.9	11.6
	Of which China	1.04	2.5	3.4	5.8	10.9	11.6
	State total	31.7	37.9	38.3	24.5	24.4	24.7
	MEC private	68.3	62.1	61.7	75.5	75.6	75.3
	State total + MEC private	100	100	100	100	100	100
Coal	MEC states	na	8.7	8.7	13.1	11.2	12.1
	CPEs	na	55.4	54.2	29.1	38.5	39.0
	Of which China	na	18.8	21.9	28.2	37.4	38.4
	State total	na	64.1	62.9	42.2	49.7	51.1
	MEC private	na	35.9	37.1	57.8	50.3	48.9
	State total + MEC private	0	100	100	100	100	100
Copper	MEC states	26.7	35.2	30.6	22.4	20.3	18.4
	CPEs	22.0	23.5	21.9	5.3	5.2	5.9
	Of which China	2.0	2.9	3.3	4.4	4.4	5.0
	State total	48.7	58.7	52.5	27.7	25.5	24.3
	MEC private	51.3	41.3	47.5	72.3	74.5	75.7
	State total + MEC private	100	100	100	100	100	100
Gold	MEC states	2.3	3.4	2.3	6.2	4.7	4.3
	CPEs	19.9	25.1	19.0	7.0	10.3	11.0
	Of which China	0.1	4.0	4.3	6.3	9.1	9.8
	State total	22.2	28.5	21.3	13.2	15.0	15.3
	MEC private	77.8	71.5	78.7	86.8	85	84.7
	State total + MEC private	100	100	100	100	100	100
Iron ore	MEC states	19.5	23	22.5	27.1	10.3	9.5
	CPEs	33.9	44.5	42.4	10.9	15.0	18.5
	Of which China	5.7	7.4	8.3	10.8	15.0	18.5
	State total	53.4	67.5	64.9	38	25.3	28
	MEC private	46.6	32.5	35.1	62	74.7	72
	State total + MEC private	100	100	100	100	100	100
Lead	MEC states	8.6	12.7	8.2	4.1	2.4	2.2
	CPEs	29.9	31.3	32.6	22.3	33.8	34.3
	Of which China	3.9	6.2	11.1	21.6	33.5	34.3
	State total	38.5	44	40.8	26.4	36.2	36.5
	MEC private	61.5	56	59.2	73.6	63.8	63.5
	State total + MEC private	100	100	100	100	100	100
Manganese	MEC states	22.8	13.1	13.4	14.1	10.6	11.0
	CPEs	41.9	55.1	48.7	17.9	24.1	24.0
	Of which China	4.2	12.1	12.6	17.9	24.1	24.0

Mineral	Entity	Controlled share of world production %					
	State total	64.7	68.2	62.1	32.0	34.7	35.0
	MEC private	35.3	31.8	37.9	68.0	65.3	65.0
	State total + MEC private	100	100	100	100	100	100
	Entity	Controlled share of world production %					
	1975	1984	1989	2000	2005	2006	
Nickel	MEC states	2.8	14.2	12.2	8.7	7.9	7.7
	CPEs	23.4	31.1	32.8	10.1	9.9	10
	Of which China	na	2.4	3.8	4.3	4.3	4.7
	State total	26.2	45.3	45	18.8	17.8	17.7
	MEC private	73.8	54.7	55	81.2	82.2	82.3
	State total + MEC private	100	100	100	100	100	100
Tin	MEC states	22.1	24.0	15.7	17.4	15.7	19.8
	CPEs	16.6	18.9	22.0	40.5	35.8	36.4
	Of which China	9.2	8.9	14.8	38.8	34.3	34.8
	State total	38.7	42.9	37.7	57.9	51.5	56.2
	MEC private	61.3	57.1	62.3	42.1	48.5	43.8
	State total + MEC private	100	100	100	100	100	100
Zinc	MEC states	10.6	14.0	11.7	9.5	4.2	4.1
	CPEs	27.4	25.9	29.2	20.9	25.9	28.4
	Of which China	2.2	4.3	9.2	20.2	25.2	27.7
	State total	38	39.9	40.9	30.4	30.1	32.5
	MEC private	62	60.1	59.1	69.6	69.9	67.5
	State total + MEC private	100	100	100	100	100	100

Sources: Ericsson and Tegen 1992, Raw Materials Data 2008.

Note: na: not available

MEC states: Market Economy Countries, state owned companies.

MEC private: Market Economy Countries, private owned companies.

CPE: Central Planned Economies, state owned companies.

## Appendix H: State/private control of refining of selected minerals 1975-2006

Mineral	Entity	Controlled share of world production %					
		1975	1984	1989	2000	2005	2006
Alumina	MEC states	9.6	17.5	18.6	13.6	9.8	9.7
	CPEs	16.6	18.2	19.8	8.1	13.1	19.0
	Of which China	1.5	3.4	3.4	8.1	13.1	19.0
	State total	26.2	35.7	38.4	21.7	22.9	28.7
	MEC private	73.8	64.3	61.6	78.3	77.1	71.3
	State total + MEC private	100	100	100	100	100	100
Aluminium	MEC states	11.9	22.7	26.5	22.1	20.4	20.3

Mineral	Entity	Controlled share of world production %					
	CPEs	20.7	20.2	20.2	12.1	24.5	27.6
	Of which China	na	2.8	3.9	12.1	24.5	27.6
	State total	32.6	42.9	46.7	34.2	44.9	47.9
	MEC private	67.4	57.1	53.3	65.8	55.1	52.1
	State total + MEC private	100	100	100	100	100	100
Copper	MEC states	16.2	24.7	22.8	19.9	17.0	16.1
	CPEs	24.9	24.6	22.8	9.0	14.9	16.9
	Of which China	2.9	3.4	4.3	9.0	14.9	16.9
	State total	41.1	49.3	45.6	28.9	31.9	32.9
	MEC private	58.9	50.7	54.4	71.1	68.1	67.1
	State total + MEC private	100	100	100	100	100	100
Nickel	MEC states	1.0	8.7	9.8	4.2	3.1	3.5
	CPEs	24.0	32.3	33.4	8.1	10.6	10.9
	Of which China	na	2.4	3.1	4.6	7.6	8.0
	State total	25.0	41.0	43.2	12.3	13.7	14.4
	MEC private	75.0	59.0	56.8	87.7	86.3	85.6
	State total + MEC private	100	100	100	100	100	100
Tin	MEC states	11.4	21.3	20.2	19.6	15.7	14.2
	CPEs	17.4	23.2	21.6	43.0	34.5	40.4
	Of which China	9.7	13.3	12.3	42.3	33.5	39.2
	State total	28.8	44.5	41.8	62.6	50.2	54.6
	MEC private	71.2	55.5	58.2	37.4	49.8	45.4
	State total + MEC private	100	100	100	100	100	100
Zinc	MEC states	9.7	13.8	10.4	9.1	4.6	4.7
	CPEs	31.3	26.5	27.9	21.8	27.4	30.0
	Of which China	2.6	3.6	6.7	21.4	26.8	29.4
	State total	41.0	40.3	38.3	30.9	32.0	34.7
	MEC private	59.0	59.7	61.7	69.1	68.0	65.3
	State total + MEC private	100	100	100	100	100	100

Sources: Ericsson and Tegen 1992, Raw Materials Data 2008.

Note: na: not available

MEC states: Market Economy Countries, state owned companies.

MEC private: Market Economy Countries, private owned companies.

CPE: Central Planned Economies, state owned companies.

## Appendix I: Environmental and Social issues in mining regimes in selected African countries

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are environmen- tal requirements integrated into the mining legislation?	Yes, the Minister of minerals, energy and water resourc- es, before granting a prospecting li- cence must be sat- isfied that the proposed program of prospecting operations is ad- equate and makes proper provision for environmental protection.	Yes	Under the Mining Proc. No 52/1993, Article 26(3), min- ing right holders are required to observe the health and safety of their agents, employees and other person in their operations and to minimise environmental pollution.	No	Under the Miner- als and Mining Act 2006, sec 18 and 49(2)(d) the mineral right holder is re- quired to obtain the necessary approvals and permits required from the Forestry Commission and the Environmental Protection Agency for the protection of natural resources, public health and the environment before undertaking an activity or opera- tion under a mineral right.	Yes. Mine and quarry operations must be carried out in such a way as to ensure environ- mental protection in accordance with the Environ- ment Code. Enter- prises are required to take all steps necessary to prevent pollution of the en- vironment, to treat wastes, emanations and effluence, and to preserve the forest and water resources.	Yes. See Mining Law 2002, Chap- ter V
Are there manda- tory environmental pre-conditions to obtain exploration rights?	Yes	No. The ap- plication for an Ex- ploration Licence is not subject to technical and envi- ronmental evaluations.	No	No	There is no manda- tory environmental precondition set to obtain exploration rights. However, the mineral right holder is required to obtain the necessary approval required from the Forestry Commission and the Environmental Protection Agency before undertaking any activity.	No	No



Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are there manda- tory environmen- tal pre-conditions to obtain mining rights?	Yes, the applicant for a mining li- cence is required to submit a com- prehensive EIA as part of the project feasibility study report.	Yes, an ap- plicant for exploita- tion licence is required to submit with his/ her appli- cation an Environ- mental Im- pact Study (EIS) and the Envi- ronmental Manage- ment Plan of the Project (EMPP).	Under the <i>Mining Proc. No 52/1993, Article 46(2)(h) and the Mining Regulation, Article 5(2)(d)</i> , applicants for large scale min- ing licences are re- quired to submit an environmental impact study before licence is granted.	No	Under the mineral and mining Act, there are no manda- tory environmental prerequisites that need to be fulfilled to get mining rights. Nonetheless, the EIA regulation requires any person before commencing any of the undertakings specified in Schedule 1 of the Regulation, to get the undertak- ing registered by the Agency and obtain an environmental permit. For any of the under- takings mentioned under Schedule 2 of this Regulation an EIA is required be- fore an environmen- tal permit is issued.	No	No
Are there manda- tory environmen- tal prerequisites to maintain mining rights?	Section 65 of the Mines and Min- erals Act puts an obligation on the holder of a mining licence to conduct his operations in such manner as to preserve in as far as possible the natural environ- ment, minimize and control waste or undue loss of or damage to natural and biological re- sources, to prevent and promptly treat pollution and con- tamination of the environment.	No	According to the <i>EIA proc. 299/2002, Article 12</i> , where one fails to imple- ment the project in compliance with commitments and obligations entered into or imposed, the relevant Authority has the power to suspend or cancel the licence issued in favour of a project.	No	Environmental re- quirements are not set as preconditions to maintain mining rights, however, the mining lease au- thorizes the holder of the lease to stack or dump a mineral or waste product as ap- proved in the holder's Environmental Im- pact Statement.	No	Yes. Unless the holder of the mining conces- sion obtains an environmental permit within the specified period, the concession will be revoked. Holders of min- ing certificate or pass are also required to ob- serve health and safety regula- tions as well as obligations for environmental protection.

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Is there a requirement for developing an environmental management plan to obtain mining rights?	Yes, according to section 65 of the Mines and Minerals Act, an applicant for a mining licence is required to prepare and submit a comprehensive EIA. This EIA will be prepared as it is indicated under section 10 of the EIA Act. .	Yes, the applicant will be required to submit with his application an environmental management plan.	The licensing Authority requires the applicant for mining right to submit an EIA which is required to contain, among other things, measures proposed to eliminate, minimize or mitigate negative impacts (environmental management plan).	No	Submitting an environmental management plan is not a prerequisite to obtain mineral rights. However, the person responsible for an undertaking in respect of which a preliminary environmental report or an environmental impact statement has been approved shall submit to the Agency an environmental management plan in respect of his operations within 18 months of commencement of operations and thereafter every 3 years.	No	For activities categorized as Level 2 under the mining act, there is a requirement to develop an environmental management plan which is subject to prior approval by the competent entity.
Is there a requirement for updating the information presented in the environmental impact study during the course of the development of the project?	No	No	The relevant environmental agency is required to periodically monitor the implementation of authorised projects to ensure compliance with set commitments and obligations. However the agency during monitoring can require the EIA report to be revised or updated, where necessary.	No	In the event of occurrence of fundamental changes in the environment due to natural causes before or during the implementation of the undertaking; and upon such change the environmental assessment report and the environmental management plan shall be revised on the basis of the new environmental condition.	No	No

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Which institutions or officials participate in or are consulted in the decision to grant a mineral right?	The Minister of Ministry of Minerals Energy and Water Affairs, the department of Geological Survey and department of Mines take part in decision-making with regard to granting/denying a mineral right.	The Minister in charge of mines and quarries, Geological Department, Mining Registry, Head of the Provincial Authority of Mines, Department in charge of the protection of mining environment and the Inter-ministerial Committee appointed by the Minister and Directorate of Mines.	The Mines and Energy Bureau of national regional Self-Government is responsible for issuing artisanal mining as well as construction minerals mining licenses undertaken by domestic investors while the Ministry of Mines and Energy issues licenses for other mining operations.	Under the Mines and Minerals Act sec. 137 the Minister of mines or any other responsible Minister, mining commissioner and the mining affairs board are responsible for the granting or denial of mining leases.	Ministry of Lands, Forestry and Mines, on behalf of the President and upon receipt of recommendation from the Minerals Commission, may negotiate, grant, revoke, suspend or renew mineral rights in accordance with this Act.	Minister of Mines and Center of Promotion and Mining Development (CPMD) are responsible for granting of mineral rights.	<p>The relevant authority is in charge of granting or denying of mining titles and permits. There is no public participation in decision-making.</p> <p>The Council of Ministers has the powers to regulate the mining law as well as approve environmental regulations for the mining activity and those for technical mining safety.</p> <p>The National Council for Sustainable development has the power to propose mechanisms for the simplification and efficiency of the process of licensing activities related to the use of natural resources.</p>
What about in monitoring and enforcing the environmental regulations?	The Department of Environmental Affairs (the competent authority) is responsible for monitoring and enforcing the EIA Act.	The Department in charge of the protection of mining environment	The Environmental Protection Authority (EPA) and Regional Environmental Agencies as well as Environmental Inspectors to be assigned by EPA or by the relevant regional environmental agency are responsible for the enforcement of the environmental regulations.	The Minister of Environment and Tourism or any other Minister to whom the President may assign, Environmental Management Board, the National Environmental Council, the Environmental Management Agency, officers and inspectors and the Standards and Enforcement Committee are responsible for controlling and enforcing environmental regulations.	The Environmental Protection Agency is responsible to ensure compliance with and laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects.	Not Known	The Council of Ministers, the National Council for Sustainable Development (a consultative organ of the Council of Ministers), civil society, local communities and associations.

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
What are the main environmental legal compliance instruments to which mineral operations have to adhere ?	Environmental Impact Assessment Act 2005.	Not Known	The Environmental Impact Assessment Proclamation No 299/2002 and Environmental Pollution Control Proclamation No 300/2002.	Environmental Management Act [Chapter 20:27]	The Environmental Protection Agency Act, 1994 and the Environmental Assessment Regulations 1999.	Not Known	Environmental Law of September 1997
Are there prerequisite for obtaining an environmental permit?	If the competent authority determines that a proposed activity is likely to have a significant adverse environmental impact, it shall require that such activity undergo an environmental impact assessment. Based on a review of the EIA the authority may approve and grant authorization to the applicant.	Not Known	If the proposed project falls in any category listed under the directive issued pursuant to the EIA proclamation, an applicant will be required to undertake an environmental impact assessment and submit the EIA report to the Authority or the relevant regional environmental agency.	To implement the projects listed under First Schedule of the Act, the project developer requires a certificate in respect of the project after submitting an EIA report in accordance with sec. 99 of the Environmental Management Act.	A person required by the regulations to register an undertaking and obtain an environmental permit shall submit the Agency an application in such form, as the Agency shall determine. The Agency may also require an applicant to submit such other information on the undertaking as the Agency considers necessary for the initial assessment of the environmental impact of the undertaking.	Not Known	Yes, all activities, which are susceptible of significant environmental impact, are required to be licensed and registered. The issuance of the environmental licence is subject to the submission of an environmental impact assessment of the proposed activity.

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are there pre-con- ditions for main- taining an envi- ronmental permit?	The authorized person, while im- plementing the project, is required to avoid the occur- rence of adverse environmental im- pact and to comply with any terms or conditions author- ization was subject to. Otherwise, the authorisation may be revoked or modified.	Not Known	The environmental inspectors assigned by the Author- ity or the relevant regional environ- mental agency have the power to ensure compliance with environmental standards and re- lated requirements. If the inspector suspects that any activity may cause damage to the en- vironment, he shall order the taking of corrective meas- ures up to the im- mediate cessation of the activity. The Authority or the relevant envi- ronmental agency has also the power to cancel or sus- pend the license in case where the license holder fails to implement the project in compli- ance with the com- mitments he has entered into.	Every developer with a certifi- cate is required to take all steps to prevent or mitigate any un- desirable effects of the project on the environ- ment. Other- wise, the Direc- tor General has the right to can- cel or suspend the certificate.	The holder of the en- vironmental permit should take all the necessary measures so that his/her un- dertaking doesn't pose a serious threat to the environment or to public health. If the Agency finds out that a certain under- taking for which an environmental per- mit has been granted poses a serious risk to the environment, it may serve on the person responsible for the undertaking an enforcement no- tice requiring him/ her to take such steps as the Agency thinks necessary to prevent or stop the activities. The Agency may also direct the immediate cessation of the of- fending activity.	Not Known	No

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Which regulatory and monitoring institutions are involved in reviewing the environmental impact assessment report submitted by a mining project developer/applicant?	The Department of Environmental Affairs, relevant government departments and local authorities.	Department in charge of the Protection of the Mining Environment within the Ministry of Mines is the organ dealing with the technical evaluation of the EIS, MRP and the EMPP presented by the applicants requesting mining or quarry exploitation rights.	The Authority (EPA) is responsible for the evaluation of an environmental impact study report and the monitoring of projects which are subject to licensing, execution and supervision by a federal agency or which is likely to produce trans-regional impact. Its implementation when The regional environmental agencies are responsible for projects which are not subject to licensing, execution and supervision by a federal agency and which are unlikely to produce trans-regional impact	It is the General-Director of the Environmental Management Agency that is responsible to review the EIA reports submitted by the project developer.	It is stated that the Forestry Commission and the Environmental Protection Agency are responsible organs to give approvals and permits to mineral right holder before undertaking an activity or operation under the right. The Agency will also hold public hearing to solicit comments on the submitted EIA before approving it and give an environmental permit.	Not Known	For Level 2 mining activities, under Article 37 of the Mining Law, the competent entity is responsible for approving the environmental management plan. The National Council for Sustainable development may give recommendation with regard to assessment on an EIA submitted by a mining project developer.

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are there laid down rules to hold public hearings and consultation before project approval?	<p>The competent authority, within 60 days of receiving an EIA statement, is obliged to place a notification in the Gazette and in a newspaper circulating at least once weekly, for four consecutive weeks, inviting comments or objections of those person who are most likely to be affected by the proposed activity and other interested persons.</p> <p>The competent authority may hold public hearing after examining the EIA statement if it is of the opinion that the activity is of such a nature that the public should have the opportunity to make submissions or comments at a public hearing.</p>	NNo No	<p>The Authority or the relevant regional environmental agency is required to make any EIA study available to the public and ensure that the comments made by the public and in particular by the communities likely to be affected by the implementation of a project are incorporated into the environmental impact study report as well as in its evaluation.</p>	No	<p>No, there is no public hearing and consultation to grant mineral right. However, before the issuance of an environmental permit, the Environmental Agency shall hold a public hearing in respect of an application where there appears to be public reaction to the commencement of the proposed undertaking; where the undertaking will involve the dislocation, relocation or resettlement of communities; or where the Agency considers that the undertaking could have extensive and far reaching effects on the environment</p>	No	No
Can potentially affected persons prevent the grant of a mineral right or an environmental permit?	<p>The competent authority, in its decision making to grant or deny authorization based on the EIA statement submitted, should consider the comments or objections raised by persons who are likely to be affected by the proposed activity and other interested person.</p>	No	<p>In case of the granting of an environmental permit, the potentially affected persons will be given the opportunity to comment on the EIA report submitted by an applicant. However, during the assessment of an application for mining license, the people likely to be affected by the mining project are not consulted by the decision making body.</p>	No	<p>Regarding the grant of mineral rights, potentially affected communities do not take part. In the case of the issuance of an environmental permit, at least a third of the panel members shall be residents of the geographical area of the proposed undertaking and shall reflect representation of varying opinions, if any, on the subject of the hearing.</p>	No	No



Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are there strategies for inspection and enforcement of compliance with the EIA and/or environmental standards that have been submitted by an applicant?	The relevant technical department or local authority is under the obligation to monitor the implementation of the activity to determine compliance with the agreed mitigation measures, both during and after implementation of an activity. They are also required to carry out an environmental audit biennially and demand the developer to take specific mitigation measures to address the environmental impact of their activities.	No	The Authority or the relevant regional environmental agency and their environmental inspectors have the responsibility to monitor the implementation of an authorized project in order to evaluate compliance with all commitments made by, and obligations imposed on the proponent during authorization	The Director-General is required to carry out environmental audits of any project, in consultation with such authorities as he considers appropriate, to ensure that the implementation of the projects complies with the requirements of this Act.	As per the Environmental Protection Agency Act, one of the functions of the Agency is to ensure compliance with any laid down environmental impact assessment procedures in the planning and execution of development projects. Likewise, the environmental permit holder will be required by the agency to submit an annual report in respect of his undertaking.	No	There is no particular provision with regard to strategies for inspection of compliance of the developer with the EIA that he/she has submitted.
Is there a document setting out social policy in the context of mineral operations?	No	No	No	No	No	No	No

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are social provisions integrated into the mining legislation?	Yes	Yes	License holders are required to give preference to Ethiopian nationals when hiring provided that such persons have the required qualifications. They shall also provide training and education necessary for mining operations and also provide them with appropriate clothing and protective equipments, health and medical facilities.	Yes	Yes	Under articles 18 and 19 of the Mining Code, mine or quarry title holders and all enterprises working for them must give preference to Guinean enterprises for all construction, supply or service contracts, provided that such enterprises offer prices, quantities, qualities and delivery schedules that are at least comparable. Mine or quarry title holders and all enterprises working for them must give preference to Guinean workers where suitable.	Yes, holders of reconnaissance licence, mining concession and mining certificate are required to compensate the land users for damage caused to their land or property resulting from their activities in the area.
What social requirements must be satisfied before a mining right is granted?	The Minister before granting minerals permit should ascertain whether the consent of the owner of the area applied for has been obtained.	An application for exploitation licence should incorporate, among other things, the plan as to how the project will contribute to the development of the surrounding communities.	There are no social requirements set as a precondition to get a mining concession.	There are no social requirements set under the mines and minerals Act.	An application for a mineral right shall be submitted to the Minerals Commission in the prescribed form and shall be accompanied with a statement providing, among other things, particulars of the applicant's proposals with respect to the employment and training of Ghanaians in the mining industry. A detailed program for the recruitment and training of Ghanaian personnel is a condition for the grant of a mining lease.	No social preconditions are set in order to get mining right.	There are no social requirements set as preconditions in order to get mining concession.
How are the rights and interests of the communities to be affected by mining be taken in to account?	Section 60(a)(ii) of the Mines and Minerals Act puts a provision that restricts the holder of a mineral concession from exercising any right bestowed upon him/her without the written consent of the owner or lawful occupier of the area.	Nothing is mentioned under the mining code with regard to the protection of rights of communities likely to be affected by the mining activity.	The licensee has an obligation to take proper precaution not to interfere with legitimate occupants of the license area, the land covered by the lease and adjacent land. Where occupants have to be displaced, compensation shall be made payable.	Under the Mines and Minerals Act, any owner or occupier of reserved ground who is injuriously affected by any mining operations shall be entitled to recover compensation	The Act entitles the owner or lawful occupier of any land subject to a mineral right to get compensation for the disturbance of the rights of the owner or occupier.	Mining titleholders must indemnify the eventual legitimate occupants of such land for all loss of enjoyment resulting there from their activities. Any damage caused by a mining title holder to owners, usufructuaries and legitimate occupants of the soil or their representatives gives right to a claim for indemnity.	They will be entitled to compensation for any damage caused to their land or property as a result of the mining activity.

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are the mining companies required to consult with the groups and communities to be affected by the project to get their free and informed prior consent?	The companies are not obligated to consult the communities to be affected by the project in order to get a mining concession.	No	No	No. However by sec 123 of the Mines and Minerals Act, the owner or occupier has a right to lodge objections to the Board with regard to the grant of the application.	No	No	No, the mining companies are not required to consult with the communities to be affected by project and get their informed consent.
Is there any kind of support for dialogue and negotiation of compensation after consent is granted by groups and communities directly affected by mining?	No	No	No	No	With regard to the amount of compensation payable, it is to be determined by an agreement between the parties or by the Ministers in case they are unable to reach an agreement. Inhabitants who prefer to be compensated by way of resettlement as a result of being displaced by a proposed mineral operation should be settled on suitable alternate land.	No	No

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Is a plan for mine closure required? Does it cover environmental and social aspects?	Both holders of a prospecting and retention licence are required to remove any camp, temporary buildings or machinery erected or installed by him, upon expiry or termination of his licence, and repair or otherwise make good any damage to the surface of the ground occasioned by such removal, to the reasonable satisfaction of the Director of Geological Survey. At the end of operations in any mine, excavation, waste dump or bond, the holder of a mineral concession shall take all necessary measures to maintain and restore the topsoil of affected areas and the land substantially to the condition in which it was prior to the commencement of operation.	During application for mining licence, the applicant is required to submit MRP along with his/her application and submit it for approval. This is a plan for rehabilitation of the environment after the mining activity.	Licencees are required to submit restoration plans as specified by directive. <b>No directive is yet issued.</b> They are to make safe all tunnels, pits and other installations of a potentially dangerous nature. They must, on surrender of licence, fence and safeguard any pits and such other works in the health, life and property of persons may not be endangered. They should also completely restore or reclaim the land covered by the licence for beneficial future use.	No	A plan for mining closure is not a requirement during application, nonetheless, the Act puts an obligation on the holder of a prospecting licence to remove within sixty days from the date of the expiration of the licence a camp, temporary building or machinery erected or installed and make good to damages to the surface of the ground occasioned by the removal.	No	Though there are no mandatory environmental preconditions imposed on an applicant for mine closure, there are requirements imposed on the holders of mining concession, mining certificate as well as mining pass to comply with the obligations for environmental protection and management during the life-cycle of the mining activity and restoration of the environment during mining closure.
Does the law incorporate rules, which oblige the mineral right holder to conduct an assessment of the environmental impacts of mining activity during mine closure?	No	An exploration licence holder is not relieved from his responsibilities with regard to environmental rehabilitation after the expiry of his title.	No	No	No	No	No
What about assessment of social impacts?	No	No	No	No	No	No	No

Issues/Topics/ Questions	Countries						
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique
Are there require- ments to post a se- curity bond upon issuance of mining authorization cov- ering reclamation and remediation of the environment?	No	As part of the MRP, an appli- cant for a mineral or quarry ex- ploration right or a temporary Quarry Ex- ploitation is required to provide a financial guarantee to cover or guarantee the mitiga- tion and re- habilitation costs of the environ- ment.	The Licensing Authority may re- quire the applicant for renewal, trans- fer, assignment or encumbrance of a license to provide cash, bank or other guarantee to secure the applicant's ob- ligations. One of the obligations of a miner is to restore the mining area prior to termina- tion of the license.	No	No	No	No
If not what reme- diation/rehabilita- tion requirements are prescribed for miners?	The holder of a prospecting and a retention licence is required to make good any damage to the surface area of the grant oc- casioned by such removal to the satisfaction of the Director of Mines.	-	The holder of a small scale or large- scale mining license is required to progressively re- store or reclaim the land covered by the license so that prior to termination of the license, the area has been completely restored for benefi- cial future use.	-	There are no reme- diation or rehabilita- tion requirements set for miners under the Mineral and Mining Act.	Holders of mining titles remain liable for any obligations incumbent upon them with respect to the environment and rehabilitation of the developed sites, even after the sur- render takes effect.	The different mining licence holders will be re- quired to comply with obligations for environmen- tal restoration.
What about on holder of an envi- ronmental permit?	The department of environment and conservation, after carrying out an environmental audit, may require an applicant who has been granted an environmen- tal permit to take specific mitigation measures to ensure compliance with predications made in the statement or mitigation meas- ures to address environmental impacts not antici- pated at the time of the authorization.	Not Known	No rehabilitation requirements are imposed on the en- vironmental permit holder under the EIA proclamation.	No rehabilita- tion requirement is imposed on the holder of a decision letter.	An environmental impact statement for mining and other extractive industry shall include recla- mation plans.	Not Known	The environmen- tal law of 1997 does not impose any obligation on the holder of an environmental permit to post security bond or to come up with any rehabilita- tion measures upon issuance of the permit.

Issues/Topics/ Questions	Countries							
	Botswana	Democrat- ic Republic of Congo	Ethiopia	Gabon	Ghana	Guinea	Mozambique	
Source	Mines and Minerals Act 1999 and Environmental Impact Assessment Act 2005	Law No 007/2002 of July 11, 2002 relating to the mining code	Mining Proclamation No 52/1993, Mining (Amendment) Proclamation No 22/1996, Mining Regulation No 182/1994, Environmental Impact Assessment (EIA) Proclamation No 299/2000 and Environmental Pollution Control Proclamation No.300/2002	Mining Law No 005/2000, Environmental Management Act [Chapter 20:27], Mines and Minerals Act	Minerals and Mining Act 2006, Environmental Protection Agency Act 1994 and Environmental Assessment Regulations 1999	Mining Code 1995	Mining Law 2002, Environmental Law 1997	

## Appendix J: Canadian Roundtable Process on CSR and the Canadian Extractive Industries in Developing Countries

The Canadian Roundtable Process on CSR and the Canadian Extractive Industries in Developing Countries was developed in response to complaints against Canadian companies operating overseas in the areas of social, human rights and environmental responsibility. Trade unions, faith-based groups, environmentalists, human rights groups and other civil society groups were active in expressing these complaints. In June 2005, the Parliamentary Standing Committee on Foreign Affairs and International Trade issued a report titled Mining in Developing Countries—Corporate Social Responsibility, which called for the institution of a multi-stakeholder process to consider what policies and programmes needed to be strengthened and which new ones created in this area.

A seventeen person Advisory Group was established for the process. It consisted of persons from academia, civil society, the extractive industries, the financial sector and labour. It worked with an inter-departmental committee made up of Canadian Government officials in establishing how the process would be conducted, what the agenda of the various components would be, the list of presenters, experts, etc.

Meetings were held in four locations between June and November 2006 – in Calgary, Toronto, Montreal and

Vancouver. These were structured into (a) open public sessions where presentations were made by various organizations or members of the public and (b) issue focused sessions which involved more detailed discussions with particular experts. Over 100 written representations were also received as part of the process, which was also organized around five themes identified by the report of the Parliamentary committee:

- CSR Standards and Best Practices
- Incentives Supportive of the Implementation of CSR Standards
- Assistance to Companies to Implement CSR Standards and Best Practices
- CSR Monitoring and Dispute Resolution and
- Capacity Building for Resource Governance in Developing Countries

Civil society and mining sector focal points were established as channels for inputs and to contribute to the selection of participants and the drafting of reports. Civil society groups formed the Canadian Network on Corporate

Accountability (CNCA) to engage in the process. A report was produced to summarise the discussions at each of the four roundtables held. According to the Advisory Group, “[e]very Roundtable participant, both at the Open Sessions and the Issue Focus Sessions, was reminded that the focus of the process was on developing potentially actionable ideas to be carried out by government, industry and civil society to enhance the CSR performance of the Canadian extractive sector operating in developing countries.” (p.2 of the Advisory Group Report.)

The Report of the Advisory Group was published in March 2007. Its “central recommendation” is that “the Government of Canada, in cooperation with key

stakeholders, ... adopt a set of CSR Standards that Canadian extractive-sector companies operating abroad are expected to meet and that is reinforced through appropriate reporting, compliance and other mechanisms.” It identifies the main components and key attributes of a Canadian CSR Framework as follows, using the words of the Executive Summary:

- The Canadian CSR Standards, for initial application, based on existing international standards that are supported by ongoing multi-stakeholder and multilateral dialogue.
- CSR reporting obligations based on the Global Reporting Initiative, or its equivalent during an initial phase-in period, at a level that reflects the size of the operation.
- An independent ombudsman office to provide advisory services, fact finding and reporting regarding complaints with respect to the operations in developing countries of Canadian extractive companies.
- A tripartite Compliance Review Committee to determine the nature and degree of company non-compliance with the Canadian CSR Standards, based upon findings of the ombudsman with respect to complaints, and to make recommendations regarding appropriate responses in such cases.

- The development of policies and guidelines for measuring serious failure by a company to meet the Canadian CSR Standards, including findings by the Compliance Review Committee. In the event of a serious failure and when steps to bring the company into compliance have also failed, government support for the company should be withdrawn.
- A multi-stakeholder Canadian Extractive Sector Advisory Group to advise government on the implementation and further development of the Canadian CSR Framework

(p.iii of the Report.)

On March 26, 2009, almost two years after the Roundtable Advisory Group’s report was published, the Canadian government responded with a press release announcing new measures to help Canadian mining, oil and gas companies meet and exceed their social and environmental responsibilities when operating abroad. The press released noted that the Canadian government wanted to provide tools, guidance and advise to Canadian companies in terms of their impact on mining-affected communities. The measures supported by the Canadian government would assist companies to “meet and exceed their obligations with respect to corporate social responsibility”. ([www.international.gc.ca/media\\_commerce/comm.news-communiques/2009/38...](http://www.international.gc.ca/media_commerce/comm.news-communiques/2009/38...))

Initiatives announced include the creation of a new Office of the Extractive Sector Corporate Social Responsibility Counsellor to assist in resolving social and environmental issues relating to Canadian companies operating abroad in this field; supporting a new Centre of Excellence to be established outside government to provide information for companies, non-governmental organizations and others; continuing Canadian International Development Agency (CIDA) assistance for foreign governments to develop their capacity to manage natural resource development in a sustainable and responsible manner; and promoting internationally recognized, voluntary guidelines for corporate social responsibility performance and reporting.



## Appendix K: Extracts from YAOUNDE VISION (Yaoundé, Cameroon, 19-22 November 2002)

### STATEMENT

Contribute to sustainably reduce poverty and improve livelihood in African Artisanal and Small-scale Mining

(ASM) communities by the year 2015 in line with the Millennium Development Goals.

### GOALS:

- › Acknowledge and reflect the ASM sectorial issues in national legislation, and codes;
- › Mainstream poverty reduction strategies into mining policy inclusive of ASM policies.
- › Integrate ASM policy into the Poverty Reduction Strategy Paper process with linkages to other rural sectors, and develop a strategic framework for PRSPs
- › Revisit existing thinking on ASM legislation (traditional land rights, and modern land use legislation nexus) and role of central government;
- › Strengthen Institutions:
  - › Improve the availability of appropriate technologies
  - › Develop analytical & business skills
- › Undertake necessary reforms of the ASM sector: Improve policies, institutions, processes and the ASM stakeholders' livelihood, develop partnerships, promote sustainable use of natural resources, infrastructure development and land use management.

## Appendix L: Auction systems for mineral licensing

### Introduction

Transparency is one of the auction system's strongest points. A properly designed auction system implies the licence is awarded according to relatively objective criteria made available in advance.

Auction systems have not usually been applied in mining regimes. At the exploration stage, first-come first-served and discretionary procedures have been generally adopted, with an automatic entitlement to mine upon discovery of an economic resource subject to compliance with applicable mining regulations. They are, however, frequently applied for the award of petroleum exploration rights. Two main differences between mining and petroleum operations which could impact the applicability of having an auction format are the relatively lower dollar values involved with mining, and also geological site information availability. Generally, mining projects involve lower

dollar values than their petroleum counterparts. This may mean that the costs associated with implementing an auction process are not justified. Whether an area is prospective enough to warrant the cost of an auction procedure requires some preliminary geological data.

The success of an auction system is greatly enhanced with increasing geological information. At a minimum, enough information to define the area for auction is required. Auction systems are likely to function best when geological risk is relatively lower and bidders can base their assessment more on development, operational and market risk factors, with greater potential to attribute higher value on a risk basis. For existing mining sites, and high value highly prospective areas, the auction system has been used in a number of instances: in Liberia and India, as well as in privatization efforts in Zambia

and Ghana. When auctioning of exploration licenses was recommended in Australia (although ultimately not adopted), it was accompanied by recommendation for

government investment in the acquisition and dissemination of pre-competitive geological data.

## **Differentiation of Resource Terrains based on Potential/Risk**

Within a jurisdiction, different areas based upon different geological risk will exist. Government can apply a different licensing regime to each different type of area. A country can be divided into different classified areas, depending upon the geological information available, and the known value of any mineral deposits. These classifications can range from areas of low risk (existing/abandoned mining sites, well explored parts of the African Goldbelts, coalfields, the Zambia/Congo Copperbelt etc), to areas

of high risk (where no exploration activities have ever been carried out or where initial exploration work did not identify a deposit justifying further exploration). Classification can also depend upon the type of mineral involved. Each classification is then treated differently for licensing allocation purposes: the low risk sites generally being subject to auction, while the high risk sites are subject to more discretionary systems.

## **A classification system of this kind has recently been introduced in China.**

Auctions apply to areas where government funded exploration has resulted in a viable deposit being found; mining rights previously held by an entity have been extinguished; exploration rights have been extinguished, but exploration was taken to an advanced stage and a viable deposit is present; as well as other areas as the Ministry of Land and Natural Resources may determine.

Design Approach and Product Definition

### **Preliminary**

The success of auctions in achieving a variety of policy and fiscal goals depends to a large extent on the design and the number of participants in the auction. Auction design involves a multitude of issues such as the need for pre-qualification and guarantees in addition to auction form and biddable factor. Before any auction (or licensing generally) can be considered, government policy objectives need to be in place. Primary objectives for an auction can include: maximizing long term government rent, raising short term cash as quickly as possible, increasing local employment, focusing on infrastructure investment etc.

### **Site Definition**

Before an auction can be administered, the licence to be auctioned must be defined. This includes the physical or geographical aspect, and the license conditions.

The geographical definition of the site can vary. In cases of existing or expired mining sites, the previous site definition could logically be used. At sites where mineral deposits are known to exist but at least some degree of exploration would be required to fully appraise the resource, the site could be defined according to existing geological and geographical attributes, or more simply and practically as aggregates of graticular blocks (a graticular block may be 1km x 1km or 1 min x 1 min or 5 min x 5 min). Sites of sufficiently large size and high value can be separated into a number of blocks, as done in the petroleum context.

If necessary, to assist governments in defining areas most in demand, an “invitation for expressions of interest” could be offered to the investor market to gain an understanding of which areas the investors consider the most appealing, as is often done in the petroleum context. This information would serve two purposes: it assists government in defining the areas to be auctioned, and it gives some guidance on the likely level of interest and competitive pressure in a future auction process.

The licence conditions include such factors as minimum work program requirements and the ‘fixed’ fiscal regime including taxes which are not being subjected to auction. Specific development conditions and targets can be incorporated.

## Approaching the Process

An auction process begins with public advertisement of the auction. The procedure for awarding the license is described, including pre-qualification procedures, auction rules alongside the details of the license site and

conditions. This should be done well in advance of the auction. A clear and complete statement of the auction process is essential to bidder participation.

## Conducting the Auction

The relevant mining department can conduct the auction itself. Alternatively, a specialized separate government body can undertake this task. Transparency and objectivity are crucial to the auction process, and sufficient government capacity is required to conduct the auction. It is quite possible to outsource the process itself to specialized third party auction managers. This can reduce the burden upon government institutions, as well as alleviate potential concerns that some prospective applicants may have regarding transparency. There exist commercial platforms for auctions to be conducted electronically and via the internet.

### Pre-qualification

Mining operations require substantial technical and financial capability to conduct an efficient operation, and thereby maximize the value of a nation's resources. Furthermore, mining activity involves significant environmental and health and safety risks. Many potential environmental and safety disasters can only be addressed by adequately financed and competent implementation of preventative measures, and are very costly or impossible to redress after the event. Hence, governments may want to ensure that any company awarded a mining licence has met minimum technical and financial capacity requirements. This is in order to safeguard against significant damage being caused and society being left without redress, in the situation that a company may be unable to remedy the situation (either because the damage caused is unable to be fixed retrospectively, or because the company lacks funds to do so). Pre-qualification is a tool government can use to achieve this. (In addition, the imposition of a bond and perhaps an insurance premium can be considered.)

It is better to have financial and technical capacity dealt with as a pre-qualification issue, rather than as a biddable

factor. Other issues about the 'character' of a potential applicant, such as national security concerns should be dealt with in pre-qualification. Such pre-qualification conditions should be stated up front. However, it is important that pre-qualification is used only in a limited way to set minimum hurdles and should be objective. Otherwise, it risks becoming a process lacking transparency, inviting corruption and ultimately mitigating against the benefits of an auction system.

### Reservation Price and Penalties for Default

If bidding competition for licences is strong, reservation prices are usually unnecessary. But if bidding competition for licences is not adequate, reservation prices at the auction can be used to simulate additional bidders, thus enhancing the prospect of increasing revenues.

Reservation prices can be set in advance as an open minimum bid requirement, or remain withheld from auction participants. The reservation price can also be determined only after the bidding, so that it may be informed by information garnered from the bidding process (as is done in the U.S for petroleum.)

Experience has also shown that the success of an auction depends on the existence of penalties for bidders who default on their bids - such as requiring a deposit to accompany a bid. In cases where the biddable factor does not involve an upfront cash payment, bank guarantees or letters of credit could be used to achieve this. Minimum work programme requirements (accompanied by penalties for default) also function similarly to a form of penalty. It is important to have penalties to prevent companies merely bidding for 'options', perhaps looking to sell rights later on if mineral prices increase. This has occurred in spectrum and satellite television license auctions in the U.S and India, and Australia respectively,

and resulted in long delays in ultimately implementing socially desirable projects. However, the requirement for some kind of deposit can pose a small barrier to entry for less capitalized applicants.

### **Biddable Factor**

The biddable factor refers to the factor that is actually the subject of competitive bidding. Other factors exist but are not subject to bidding. (They are referred to as fixed in this sense. However this does not mean they are static. A fiscal regime may not be subject to bidding but still be dynamic. For example, a tax could be pegged to mineral prices or other dynamic objective values).

Potential biddable factors include: an up-front cash payment, resource rent tax rate (fixed royalty, ad valorem, or profit share), corporate tax rate, state equity share, progressive resource rent tax rate/levels, level of capital investment and multi-user infrastructure investment, degree of linkages and CSR investment. Other factors could also be devised and used. Combinations of different factors, with each assigned a specific weighting, can be used. The fiscal regime will contain a number of these factors as fixed, with the auction of only one (or a combination) as a biddable factor as a possibility. In the petroleum context, ad valorem royalty, profit share and pure cash bidding have been used internationally.

### **Up-front cash payment**

Pure cash bidding has been put forward as a theoretically 'optimal system' in terms of allocation efficiency, rent capture and neutrality. It involves no ongoing administrative costs (in terms of rent collection; there would still be for example environmental regulatory ongoing costs). Pure cash bidding also removes the need for some pre-qualification. It is also appealing to countries suffering from an immediate budget short fall.

However, pure cash bidding involves transfer of all the risk to the mining company. Assuming a state's discount rate is lower than that of industry, then front-loading the rent in this way may not be optimal in that a higher risk premium will be factored into the bids made. There is also a significant perceived 'political risk' that after the

upfront money is paid there will be pressure to tax again in the future. This system also acts as a barrier to smaller entrants who may lack access to capital requirements to make the large up-front cash payments. Furthermore, as the money is paid up front, there is a concern that it will not be equitably distributed over a period of time to benefit people over the life of the mine and into the future.

Many of these problems can be partially overcome if the cash biddable factor is combined with a fixed resource rent tax. This way much of the rent is back loaded and risk is shared, while the cash payment serves primarily to capture excess rent and allocate the license efficiently. This type of fiscal regime was recommended in Australia two decades ago although ultimately not implemented.

### **Resource Rent Tax**

A resource rent tax is used to denote three typical forms of taxation of minerals: the fixed royalty which is a fixed value per unit weight of extracted ore, the ad valorem royalty which is a percentage of the value of the extracted ore, and profit sharing which is a percentage of the profit made by the mining company from the specific 'ring fenced' resource. There are various ways of calculating these taxes, often with provision for recouping capital investment and other costs at an accelerated rate.

The resource rent tax is back-loaded. This shares the risk and ensures a more equitable disbursement of revenue into the future. However, without a significant up-front cash component, significant pre-qualification and work programme requirements would need to be mandated and monitored. There is also a risk that during mineral price downturns there will exist strong pressure to renegotiate the resource rent tax if it is not profits related. (This is a problem associated generally with resource rent taxes, regardless of whether they are auctioned or not). Having a reservation price or 'floor' resource rent tax is particularly important to ensure government receives a fair minimum value from its natural resources.

### **Capital investment and infrastructure investment**

Bidding on capital expenditure on multi-user infrastructure could encourage infrastructure development. With appropriate conditions, this could lead to benefits for related and unrelated industries and in turn the public. The relatively low incremental cost associated with increasing capacity for large infrastructure investment makes the focus on multi-user infrastructure an efficient and synergistic mechanism to promote wider economic

development. This is especially so given the large constraints the current inadequate levels of infrastructure pose across Africa.

Auctioning this factor can lead to 'gold plating' and inefficient over investment in infrastructure. Thus its potential should be analysed in the context of the specific site and likely infrastructure demand and associated synergies deemed present.



