

**EVALUATION OF THE WORLD BANK GROUP'S  
ACTIVITIES IN THE EXTRACTIVE INDUSTRIES**

**Background Paper**

**Review of the Portfolio of World Bank  
Extractive Industries Projects**



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**Document of the Operations Evaluation Department**

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**This report was prepared for OED by Ramachandra Jammi (Consultant). The views expressed herein do not necessarily represent the views of OED or the World Bank.**

## Abbreviations and Acronyms

AFR	Africa Region	LAC	Latin America and the Caribbean Region
ANAIM	Agency for the Management of Mines and Infrastructure (Guinea)	MENA	Middle East and North Africa Region
ASM	Artisanal and Small Mining	MMGE	Ministry of Mines, Geology and Infrastructure
BCP	Bangchak Petroleum Public co. Ltd (Thailand)	MMI	Ministry of Mines and Industry
BJSC	Baganuur joint Stock Company (Mongolia)	MSP	Miners Social Package (Poland)
CABI	Capitania de Alto y Bajo Izozog (Bolivia)	NGO	Non-Governmental Organization
CAE	Country Assistance Evaluation	NPV	Net Present Value
CAS	Country Assistance Strategy	OD	Operational Directive (World Bank)
CDP	Community Development Program	OP	Operational Policy (World Bank)
CMNA	Coal Mines Nationalization Act	OPA	Oil Producers' Associations (Russia)
CONARE	Consejo Nacional de Rectores	PPAR	Project Performance Assessment Report
COPRI	Committee for the Promotion of Private Investment (Peru)	PSC	Production-Sharing Contract
CPRA	Coal Price Regulation Act (India)	PSR	Project Supervision Report
CSESMP	Coal Sector Environmental and Social Mitigation Project	PTT	Petroleum Authority of Thailand
CSR	Coal Sector Rehabilitation Project	SAL	Structural Adjustment Loan
CVRD	Compania Vale Do Rio Doce (Brazil)	SAR	Staff Appraisal Report
EAP	East Asia and the Pacific Region	SAS	South Asia Region
ECA	Europe and Central Asia Region	SECAL	Sectoral Adjustment Loan
EIR	Extractive Industries Review	SIL	Specific Investment Loan
ERL	Emergency Rehabilitation Loan	SIRESE	Sistema de Regulacion Sectorial (Bolivia)
ERR	Economic Rate of Return	SOLIMA	Solitary Malagasy (Madagascar)
FUNAI	Fundação Nacional do Indio (Brazil)	SSM	Small Scale Mines
GDP	Gross Domestic Product	TA	Technical Assistance
GHG	Greenhouse Gas	TAL	Technical Assistance Loan
GOPNG	Government of Papua New Guinea	UDKR	Ukrainian State Company for Coal Sector Restructuring
IC	Implementation Committee	UNDP	United Nations Development Program
IMF	International Monetary Fund	WBG	World Bank Group
IP	Inspection Panel	YPFB	Yacimientos Petroliferos Fiscales Bolivianos
IPDP	Indigenous Peoples' Development Plan	ZCCM	Zambia Consolidated Copper Mines Ltd.

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**WORLD BANK’S EXTRACTIVE INDUSTRIES PROJECTS**  
**— A PORTFOLIO REVIEW**

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# 1. Overview and Introduction

## BACKGROUND AND RATIONALE

### Economic Growth and Governance in Resource-Abundant Developing Countries

1.1 Extractive industries — oil, gas, and mining<sup>1</sup> — have been important contributors to the economic development of many countries. They generate government revenues, foreign exchange earnings, and employment, often in economically depressed and neglected areas. They support substantial local and national infrastructure investments and provide host countries with opportunities to build their institutional and administrative capacities.

1.2 However, extractive industries also provide opportunities for rent-seeking activities and for distorting public expenditure policies. In the 1980s and 1990s, resource-abundant developing countries tended to perform worse in many important developmental areas compared to resource-poor developing countries. Without proper planning and management, extractive industries have often resulted in adverse social and environmental impacts. This phenomenon, in which resource-abundant countries fall short of their developmental expectations based on resource extraction, and suffer from poor governance, has come to be referred to as the “Paradox of Plenty.” (Fig 1)

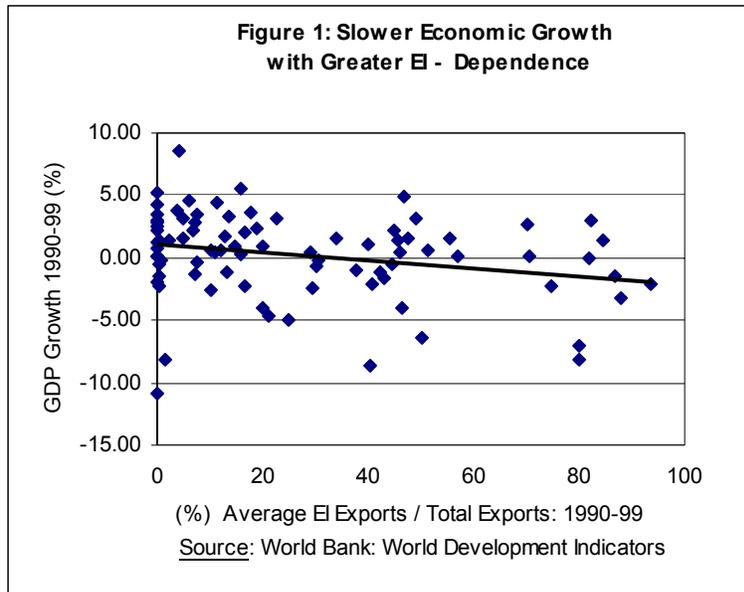
1.3 Economists and other social scientists have devoted much research over the past two decades to better understanding the relatively poor performance of many resource-abundant countries and to devising strategies for dealing with it.<sup>2</sup> Several explanations of the paradox have been proposed in the literature. Currently, however, no single model synthesizes and explains how natural capital interacts with institutional, social, and political factors to affect the efficiency with which the rents from the development of mineral resources are employed to support long-term growth and poverty reduction.

1.4 The World Bank has contributed to understanding the important developmental and governance issues facing resource-abundant developing countries through its economic research. The management of oil revenue windfalls has been the subject of major research studies since the early 1980s (Gelb 1984, 1988; Everhart and Duval-Hernandez 2001). Several studies have focused on environmental and social issues related to extractive industry activities, including community involvement (World Bank 1990, 1994; McMahon 1999; McPhail 2001). An awareness of these issues and their implications has also influenced the Bank’s policy advice and lending strategies for resource-abundant countries.

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1. “The extractive industries” for this review include oil, gas, and mining of minerals and metals. Mining for construction materials, including cement production and quarries, is not included, nor are indirect investments through financial intermediaries.

2. Gelb 1988; Sachs and Warner 1997; Richard Auty 2001, and Isham 2002 have discussed the evolution of thinking on the subject in recent years.



1.5 The emerging consensus is that the underperformance of resource-abundant developing countries, to the extent that it is the result of institutional and policy failure, is not inevitable. Overall, while the technical requirements for managing volatile and exhaustible revenue flows, and devoting them to sustainable development are well understood, they are difficult to implement for political economy reasons. Thus, creating good governance is at the heart of the institutional and policy changes needed to improve fiscal management and maximize the benefits from the development of extractive industries.

### Feedback from Civil Society

1.6 The Bank's involvement in the extractive industries has recently come under increased scrutiny from several sections of civil society. Various NGOs have claimed that the extractive industries exact a heavy toll on the environment, with the poorest citizens paying the highest price, and have put the spotlight on the treatment of local populations, especially where involuntary resettlement is involved.<sup>3</sup> Others have been concerned with issues of poor governance and failure to effectively utilize rents to support sustained national economic growth.<sup>4</sup> These concerns have culminated in a request for the World Bank Group to stop supporting the extractive industries sector, on the proposition that the adverse environmental, social, and governance impacts outweigh whatever economic and social benefits may accrue to the domestic economy and the poor.<sup>5</sup> In response to these concerns, the World Bank Group

3. Friends of the Earth. 2001. "Phasing out International Financial Institution Financing For Fossil Fuel and Mining Projects, Demanding Local Community Self-determination." Position Paper.

4. Oxfam America. 2001, "Extractive Sectors and the Poor,"

5. Letter from Friends of the Earth International to Mr. James D. Wolfensohn, President of the World Bank Group, dated October 30, 2000.

has launched an independent Extractive Industries Review (EIR)<sup>6</sup> to better understand stakeholder views and advise the Bank on its role in the sector.

## **OED EVALUATION STUDY OBJECTIVE AND PROCESS**

1.7 Conducted in parallel with the Extractive Industries Review, this Portfolio Review evaluates the effectiveness of the World Bank's projects in maximizing the sustainable development potential of the extractive industries sector. The scope of the review has been designed on the proposition that sound fiscal policies, rigorous mitigation of negative environmental and social impacts, and good governance will have to be the main elements of a strategy to address underperformance of many resource-abundant countries. Given this proposition, the review will focus on the assessment of economic effects, environmental and social effects, and governance issues associated with the Bank's projects in the sector, as follows:

- Economic Effects***
  - Improving the generation of fiscal revenues from the development of extractive industries
  - Promoting the efficient expenditure of the revenues in support of sustainable development
  - Strengthening the framework for managing the volatility and exhaustibility of fiscal revenues from extractive industries
  - Ensuring the adequacy of provisions for legal entitlements and compensation for negative impacts.
- Environmental and Social Effects***
  - Contribution to mitigation of adverse environmental impacts and pursuit of environmental objectives
  - Mitigation of social impacts, including those associated with resettlement and closure of existing facilities, and contribution to social objectives.
- Governance***
  - Improving the institutional and policy framework
  - Strengthening governance processes

## **Evaluation Criteria**

1.8 At the project level, this study evaluates the effectiveness of the World Bank's projects on the basis of an assessment of their outcome, sustainability, and institutional development impact. At the strategic level, the Bank's effectiveness will be evaluated based on an assessment of the overall coherence, level of effort, and results of its assistance to client countries for improving the contribution of the extractive industries to sustainable development.

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6. The Extractive Industries Review (EIR) is headed by Dr. Emil Salim, former Minister of Environment for Indonesia. Additional information on the EIR can be found at [www.eireview.org](http://www.eireview.org)

## Evaluation Process

1.9 The present report provides primarily project level findings on Bank assistance. It is based on a review of the Bank's portfolio of projects approved and completed since FY1993 (48 "closed" or completed projects) and still under supervision (28 "active" projects).<sup>7</sup> Detailed discussion and statistical tables on the main characteristics of the project portfolio are provided in the Annex. The report also draws from a literature survey and a survey of CASs in respect of the extractive industries.

1.10 The initial work summarized in the current report will be supplemented by three thematic studies and five in-depth cases studies of representative countries. The thematic studies will correspond to the main evaluative areas and cover (i) fiscal revenue management, (ii) implementation of safeguard policies and (iii) strengthening of governance; and will examine these issues both in the context of the extractive industries sector as well as their linkages with the wider economy. The case studies, of Ecuador, Equatorial Guinea, Ghana, Kazakhstan, and Papua New Guinea, will attempt to evaluate the effectiveness of the Bank's interventions at the country level. In addition to projects, the country case studies will also cover the analytical and advisory assistance (AAA), including economic and sector work (ESW), that constitute a substantial share of the Bank's activities in the extractive industries and are not covered in the portfolio review. The findings from these various building blocks will be integrated into the full evaluation report scheduled to be issued to CODE in June 2003.

## Structure of the Report

1.11 Following this introduction, Chapter 2 discusses the World Bank's contribution to improving the generation, management, and utilization of the economic rent through its projects in the extractive industries sector. Chapter 3 assesses the extent to which the World Bank implemented its environmental and social safeguard policies and addressed issues of capacity building and mine closures. Chapter 4 reviews the World Bank's projects contribution to strengthening governance processes in the extractive industries sector. Chapter 5 summarizes the findings of the portfolio review and outlines implications for further work.

## 2. The Bank's Evolving Policy and Role in the Extractive Industries

2.1 *1960s to the early 1980s:* During this period, the Bank assisted public sector investment efforts to enhance productive capacity in both the oil & gas and mining sectors. This trend accelerated in the oil & gas sector when the Bank established an Energy

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7. The portfolio of projects chosen for review by this study consists of all extractive industries projects approved during or after FY1993, the first financial year after the Bank adopted revised safeguard policies. A total of 76 projects are reviewed, comprising 48 completed (oil & gas: 24; mining: 24) and 28 active projects (oil & gas: 15; mining: 13) as of June 30, 2002.

Department to, inter alia, support lending for oil & gas operations after the second oil shock of 1979. Specifically, the Bank established a program to attract private financing into oil & gas exploration in countries that lacked resources to develop national petroleum industries.

2.2 **1980s:** The Bank shifted its focus in the 1980s toward supporting sector policy reform and the commercialization of state-owned enterprises (SOEs). Later in the decade the Bank pursued sector reform and liberalization and developed a framework for private investment, leading to active promotion of private investment, such as for developing exploration data. In 1984, the Bank issued policy guidelines for oil & gas (OMS 3.82).<sup>8</sup>

2.3 The guidelines under OMS 3.82 provided for the Bank to assist borrower countries to (a) design and implement effective energy policies; (b) design and implement effective investment plans and sound policies for exploration, development, and use of petroleum; (c) mobilize the domestic and external financial resources required; and (d) develop local capacity to conduct petroleum operations and to provide petroleum service efficiently and competitively. The guidelines also suggested that the Bank promote exploration only where no significant exploration was taking place.

2.4 **Early 1990s:** In keeping with OMS 3.82, in the 1990s, the Bank supported private provision of services in the extractive industries, and encouraged new direct private investment. This trend was strengthened as Central and Eastern European countries began their transition in the early 1990s. The Bank supported this shift by providing technical assistance and advisory services for the modification of legislative, institutional, and taxation regimes to accommodate and attract foreign equity investment in the extractive industries. The Bank's attention more explicitly shifted to creating an enabling environment for the private sector (thus changing the role of the government from owner-operator to regulator), privatization, mine closure, and industry restructuring as outlined in the 1992 Africa Technical Department Paper, *Strategy for African Mining*.<sup>9</sup> Thus, as countries moved from public to private ownership and extractive resource exploitation, the Bank moved away from direct lending for production-related projects, and shifted much of its effort to supporting initiatives that would bolster private sector growth.

2.5 The late 1980s and early 1990s also witnessed rising public concern about environmental degradation and social inequity. A Bank Operational Directive on environmental assessment (OD 4.01) was issued in 1989 and revised as a more comprehensive policy for environmental and social impacts, adopted in 1991. This was converted to Operational Policy (OP) 4.01 in 1999, which covers all projects except for structural adjustment loans.

2.6 Operational Policy 4.01 is particularly important for the EI sectors due to their potential for negative environmental and social impacts. The objective of the policy is to ensure that projects are environmentally and socially sustainable by preventing, mitigating, or compensating for potential adverse impacts. Under the policy, the environmental assessment of projects should take into account the natural environment (air, water, and

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8. World Bank 1984.

9. World Bank 1992.

land); human health and safety; social aspects (involuntary settlement, indigenous peoples, and cultural property); and transboundary and global environmental impacts.

2.7 **Mid- and Late-1990s:** The mid-1990s saw the Bank take a more inclusive approach to its developmental operations and begin to emphasize the need for external partnerships connecting government, the private sector, and civil society in the design and implementation of socially and environmentally sensitive projects. In the latter part of the 1990s, there was an increased focus on reform and deregulation programs in an effort to further good governance as a central element in the improvement of country economic performance. In 1998, growing management concern about environmental and social impacts led to the creation of the Bank's safeguards policy framework, which combined the environmental assessment policy with nine other "do no harm" policies.<sup>10</sup> This was followed by the establishment of an enhanced safeguards compliance system in 1999, a concerted effort to implement the policies, which had previously been more flexibly interpreted as "guidelines."

2.8 New priorities began to emerge for sustainable mining, regional and local economic development through private investment in mining, and community development. The evolution in the Bank's mining strategy was presented in two World Bank Technical Papers, *World Bank Group Assistance for Minerals Sector Development and Reform in Member Countries*<sup>11</sup> and *A Mining Strategy for Latin America and the Caribbean*.<sup>12</sup> The new priorities were documented in various partnerships, publications, conferences, and workshops on community issues, mine closure, revenue management, and sustainable development supported by the World Bank Mining Division between 1997 and 2002.

2.9 In the late 1990s, it became clear that despite efforts to coordinate over the years, IFC and the Bank have not capitalized enough on synergies between transactions and policy work. To more closely integrate WBG activities and advisory work in the extractive industries, the oil & gas and mining units of the Bank and IFC were reconstituted as joint Bank-IFC Global Product Groups.

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10. The Bank has 10 safeguard policies: 8 deal with environmental and social concerns (OP/BP 4.01, *Environmental Assessment*; OP/BP 4.04, *Natural Habitats*; OP 4.09, *Pest Management*; OP/BP 4.12, *Involuntary Resettlement*; OD 4.20, *Indigenous Peoples*; OP 4.36, *Forestry*; OP/BP 4.37, *Safety of Dams*; and OPN 11.03, *Cultural Property*) and 2 deal with legal matters (OP/BP 7.50, *Projects on International Waterways*, and OP/BP 7.60, *Projects in Disputed Areas*).

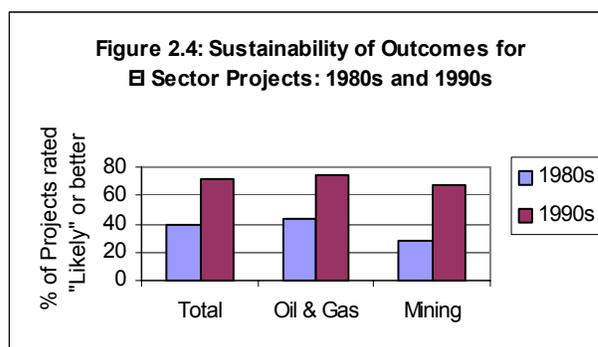
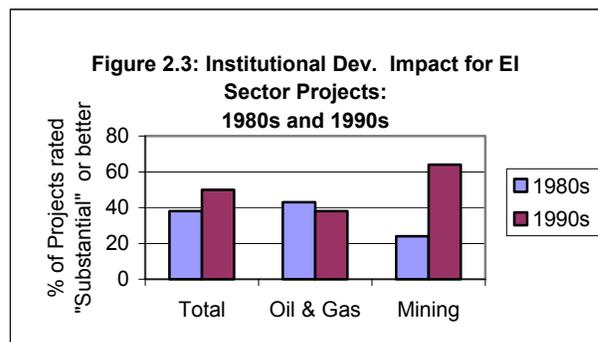
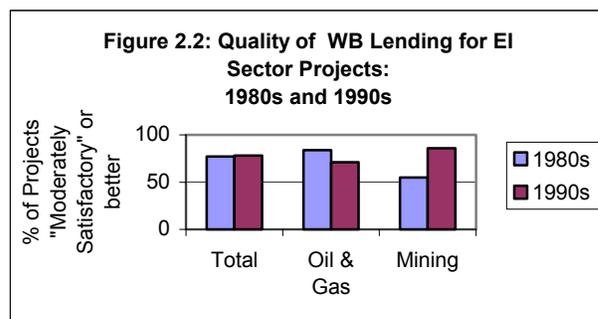
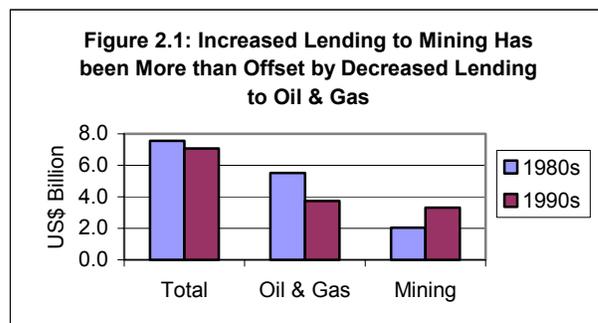
11. William Onorato, Peter Fox and John Strongman, 1998.

12. Peter van Der Veen, et al., 1996.

**2.10 Energy Business Renewal Strategy, 2001:** The most recent re-thinking of the Bank's role in the energy sector is reflected in the Energy Business Renewal Strategy (EBRS), which was presented to the Board in 2001. The EBRS recognizes a declining demand for traditional IBRD/IDA products in the energy sector and shifts the focus to the WBG's priorities — including poverty alleviation — and comparative advantages: addressing poverty, macro-governance, and the environment; supporting reform and regulation to help support competitive energy markets; facilitating the transfer of knowledge among developing countries; and catalyzing investment in non-investment rated countries. The EBRS aims to facilitate access to modern fuels, create objective and transparent regulatory mechanisms, and catalyze private investments. It continues the Bank's emphasis on closing loss-making mines and oil refineries; promoting clean transport fuels and switching from coal to gas; and facilitating environmentally sustainable exploration, production, and distribution of oil, gas, and coal. Reducing gas flaring and facilitating carbon trading and joint investments to reduce greenhouse gas (GHG) emissions are also priorities under the new strategy (see Box 2.2).

## OVERVIEW OF THE 1980S AND 1990S PROJECTS

**2.11 Lending for oil & gas decreased while mining increased:** Between the 1980s and 1990s, the overall amount of Bank lending to the EI sectors declined by 6 percent (Figure 2.1). However, this overall decline masks a difference between the two sectors: lending for the oil & gas sector fell by 34 percent, while it rose sharply by 63 percent for the mining sector. During the same period the EI sectors' share of the Bank's entire portfolio declined from 4 percent of lending to 2 percent.



2.12 **Outcome:** Overall EI project outcome<sup>13</sup> ratings were higher than the Bank-wide average during the 1980s and 1990s, though they fell somewhat for oil & gas and rose sharply for mining projects. EI projects with outcomes rated “moderately satisfactory” or better rose slightly (77 percent to 78 percent). The percentage dropped for oil & gas projects (84 percent to 71 percent), and rose significantly for mining projects (55 percent to 86 percent). Taken together, these outcomes are better than for the Bank as a whole, for which the comparable ratios rose from 65 percent in the 1980s to 75 percent in the 1990s.

2.13 **Institutional Development Impact:** The institutional development impact<sup>14</sup> for all EI projects improved between the 1980s and 1990s declined somewhat for oil & gas and rose appreciably for mining projects. The institutional development impact of all EI projects — in terms of percentage of projects that were rated “substantial” or better — rose from 38 percent to 50 percent between 1980s<sup>15</sup> and 1990s. The oil & gas sector saw moderate decline (43 percent to 38 percent), while the mining sector showed considerable improvement (24 percent to 64 percent) over the same period. Taken together, these ratings are higher than the average for all Bank projects, which rose from 30 percent in the 1980s to 43 percent in the 1990s.

2.14 **Sustainability:** The sustainability<sup>16</sup> of project benefits saw very large gains in both the oil & gas and mining sectors. The *sustainability* of outcomes — in terms of the percentage of projects for which the rating was “likely” or better — improved from 39 percent to 72 percent for all EI projects between the 1980s and 1990s with gains in both oil & gas (44 percent to 75 percent) and mining (28 percent to 68 percent). Overall, these ratings improved at a much faster rate than the Bank-wide average, which rose from 44 percent in the 1980s, to 56 percent in the 1990s.

#### **HIGHLIGHTS OF THE PORTFOLIO OF PROJECTS UNDER REVIEW: FY93-FY02**

2.15 The Portfolio Review covered all 76 EI projects<sup>17</sup> approved during the period fiscal 1993–2002. This portfolio consists of 48 *completed* projects (oil & gas: 24; mining: 24) and 28 *active* projects (oil & gas: 15; mining: 13). This section describes the main characteristics of this portfolio.

2.16 ***The transitional economies of the Europe and Central Asia Region accounted for the largest share of lending:*** For *completed projects* in both oil & gas and mining sectors, the Europe and Central Asia (ECA) region received the major share of lending (Figure 2.5). The East Asia and Pacific (EAP) region accounted for the next largest share of oil & gas lending and Latin America and the Caribbean (LAC) with the next largest share of mining lending.

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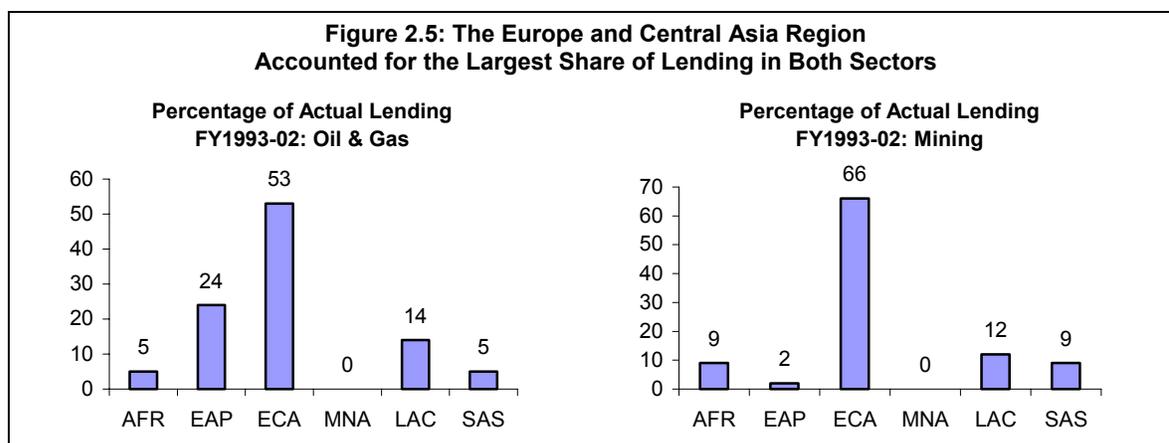
13. The outcome rating denotes the extent to which the project’s major relevant objectives were achieved, or are expected to be achieved, efficiently.

14. The institutional development impact denotes the extent to which a project improved the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources.

15. For projects completed during 1980–86 only 53 percent were rated for institutional development impact under the older performance ratings. They are therefore excluded from this comparison.

16. The sustainability rating denotes the resilience to risk of the project’s net benefit flows over time.

17. For this review, the EI portfolio includes projects that are not primarily classified under the oil & gas or mining sector headings of the Bank’s classification system but nevertheless contain significant EI-related components.



2.17 ***The most common project objectives reflected some of the similarities between the two sectors:*** Analysis of the objectives (each project could have more than one) of the projects identified a few similarities and many differences between the two sectors. Among the similarities, for both oil & gas and mining projects, institutional development, PSD, and environmental management were among the leading objectives.

2.18 The remaining objectives tended to differ across the two sectors and between completed (older) and ongoing (more recent) projects. For *completed* oil & gas projects the next most frequent objectives included pipeline construction, policy reform, production, and social objectives in that order. For *active* projects, the other objectives were production, pipeline construction, and social issues in descending order. For *completed* mining projects, other objectives in decreasing frequency were rehabilitation/closure of mines, social issues, production, and artisanal and small-scale mining (ASM). For *active* mining projects, the other objectives were social issues and policy reform — production did not figure at all.

2.19 ***The importance of the environmental assessment policy is apparent in the high percentage of projects in categories A and B:*** Among *oil & gas* projects, approximately 33 percent of all *active* and *completed* projects came under Category A<sup>18</sup> of the Bank's environmental assessment policy (OD/OP 4.01). For Category B the corresponding percentages were 25 and 17. For *mining* projects, only 20 percent of the completed projects and none of the active projects came under Category A. In addition, 50 percent of completed and 30 percent of active mining projects came under Category B.

2.20 ***Project performance ratings have been better than average:*** The Bank's portfolio of completed EI projects has generally performed well in all three categories used by OED: outcome, sustainability, and institutional development impact. Of the completed oil & gas projects, outcome was rated "moderately satisfactory" or better for 71 percent, sustainability was rated "likely" or better for 75 percent, and institutional development impact was rated "substantial" or better for 38 percent. Of the completed mining projects, outcome was rated "moderately satisfactory" or better for 86 percent, sustainability was rated "likely" or better for

18. Under WB's OP 4.01 for Environmental Assessment, Category A projects are those that are likely to have adverse environmental and social impacts that are sensitive, diverse, or unprecedented; Category B projects are those with adverse impacts on human populations or environmentally important areas; Category C is a residual category.

68 percent, and institutional development impact was rated “substantial” or better for 64 percent of the projects.

2.21 The portfolio of active projects has also been performing well according to supervision reports. All active oil & gas projects had development outcome ratings of “satisfactory” or better, and no adverse issues were reported regarding consistency with the Bank’s safeguards policies. All active mining projects had ongoing development outcome ratings of “satisfactory” or better, and only one project reported less than satisfactory consistency with a provision under the Bank’s safeguards policies. It should be noted however, that these self-assessments of active projects have not been validated by OED.

### **3. From Economic Benefits To Sustainable Development**

#### **INTRODUCTION**

3.1 Extractive industries have the potential to make a major contribution to the development of resource abundant countries by transforming their mineral wealth into sustainable development. Thus, the rationale for Bank projects is based on the expectation that they will support the country’s development goals, and this expectation is underpinned by an economic appraisal intended to ensure that the objectives have been appropriately chosen and that the project is the least cost way of attaining the stated objectives.<sup>19</sup> The discounted present value of the net benefits (NPV), the economic rate of return (ERR), or where the benefits cannot be measured in monetary terms, a cost-effectiveness criterion are the indicators of choice for making this determination. Following completion of the project, an *ex-post* recalculation of the economic rate of return or the cost effectiveness criterion is expected to determine whether the project produced the expected benefits in an efficient manner.<sup>20</sup> This Chapter discusses the available information on the extent and sources of the economic benefits from the Bank’s extractive industries projects.

#### **REPORTING OF ECONOMIC BENEFITS**

3.2 The Implementation Completion Reports (ICRs) are an integral part of the Bank’s knowledge management and accountability reporting system, and are intended to document and evaluate the outcomes and impacts of the project, including their economic benefits. As summarized in Table 3.1, the Portfolio Review found that, out of the 48 completed projects, ICRs of 17 (mostly investment loans) had re-estimates of ERRs and NPVs, and an additional 13 ICRs (mostly of technical assistance and sectoral adjustment loans) featured at least some *ex post* quantification and valuation of the benefits. This is consistent with the fact that the attribution and quantification of the costs and benefits of investment projects is simpler than for other types of projects. Nevertheless, given the issues that have been raised about the economic contribution of extractive industries projects, a greater effort to increase the

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19. I.e., whether the project creates more net benefits to the economy than other mutually exclusive options. See OP 10.04: Economic Analysis of Investment Operations, World Bank, September 1994.

20. See OP 13.55: Implementation Completion Reporting, World Bank, July 1999.

documentation and analysis of economic benefits would be desirable, including a cost-effectiveness assessment where an ERR is not feasible, in line with the Guidelines for Preparing ICRs.<sup>21</sup>

3.3 For the Specific Investment Loans (SILs), the benefits derived mainly from increased production, increased private investment, and improved productivity. Out of 20 SILs<sup>22</sup> in the portfolio, 18 had an ERR or NPV estimated at appraisal, of which 16 were re-estimated at completion. While it is comforting to note that, in 15 out of these 16 cases, the returns were greater than 10 percent,<sup>23</sup> it would also have been feasible to have reported *ex post* analyses for three of the remaining SILs.<sup>24</sup>

**Table 3.1: Economic Evaluation in Implementation Completion Reports**

Instrument (number) <sup>a</sup>	ERR/NPV/least-cost analysis conducted at appraisal	ERR/NPV/least-cost analysis reported in ICR	Quantification of benefits feasible?	Quantification done in ICR?	Monetary value of benefits feasible?	Monetary value provided in ICR?
			Yes/No/Partly	Yes/No/Partly	Yes/No/Partly	Yes/No/Partly
SILs (20)	18	16	20/-/-	17/-/3	20/-/-	15/2/3
TALs (15)	3 <sup>b</sup>	1	4/4/7	3/9/3	6/2/7	3/8/4
SECALs (9)	-	-	7/1/1	5/3/1	6/1/2	6/3/-
Total (44)	21	17	31/5/8	25/13/7	32/3/9	24/13/7

a. SILs include one emergency rehabilitation loan (ERL); TALs include one GEF project; SECALs include one rehabilitation investment loan (RIM)

b. The Equatorial Guinea Petroleum TA project estimated an FRR and the Azerbaijan Petroleum TA estimated an NPV.

3.4 The 15 Technical Assistance Loans (TALs)<sup>25</sup> in the portfolio were associated with quantifiable and valuable benefits such as increased private investment, increased gas sales, increased oil and minerals production, increased fiscal revenues, improved environmental conditions, improved sector efficiency, as well as benefits that are more difficult to quantify, such as improved legal and regulatory frameworks and institutions, and preparatory studies for future projects. Of the 15 TALs, one had a re-estimated ERR<sup>26</sup> and 7 ICRs provided at least some indication of the monetary value of the benefits. Since some benefits were amenable to monetary valuation in 12 of these projects, more could have been done to document the cost-effectiveness and highlight the economic contributions of these projects.

21. Guidelines for Preparing Implementation Completion Reports, World Bank, 1999. The earlier Bank policy on Project Completion Reports also required the preparation of an *ex post* economic analysis.

22. This figure includes one Emergency Recovery Loan.

23. I.e., a proxy for the opportunity cost of capital.

24. The fourth remaining SIL, Ethiopia's Calub Energy Project, was closed prematurely, precluding any meaningful *ex post* economic analysis.

25. This figure includes one GEF grant.

26. The ERR for the Guinea Mining Sector Investment Promotion Project was estimated for the appraisal and re-estimated for the ICR.

3.5 All the 9 completed Sectoral Adjustment Loans (SECALs)<sup>27</sup> were in the mining sector, and were associated with increased or decreased production of minerals (coal, in most cases), reduced government subsidies, cleaner environment, increased operational efficiency, improved profitability, and increased private investment. Six of the ICRs provide some data on these achievements, from which a judgment can be made about the efficiency of the projects. The other three ICRs did not provide any quantitative information on results.

3.6 Of the completed SILs that had economic benefits in the acceptable range, the benefits derived mainly from increased production, increased private investment, and improved productivity. For example, increased oil production was achieved in Russia's Oil Sector Rehabilitation I and II projects,<sup>28</sup> increased gas production was made possible by pipelines constructed under Thailand's Gas Transmission I and II projects,<sup>29</sup> and increased coal output and productivity were achieved by Coal India Ltd. with the help of India's Coal Sector Rehabilitation project.<sup>30</sup> Upgrading of gas transmission and distribution lines, and a reduction in unmetered consumption helped reduce costs for both producers and consumers as a result of Bosnia-Herzegovina's Emergency Gas Rehabilitation project.

3.7 Upstream activities in the gas sub-sector received a boost from large-scale private investments in Bolivia,<sup>31</sup> and nine new private gas enterprises were created in Brazil as a result of the Brazil Gas Sector Development project. The Ghana Mining Sector Development and Environment project helped attract an estimated \$2 billion of direct investments in the mining sector.

3.8 Among the SILs whose economic benefits fell below the acceptable range, two projects were affected by external economic factors, while another one lacked sufficient support from the government. For example, the utilization factor of the oil pipeline financed by the Korea Petroleum Distribution and Sector Management Improvement project dropped from 34 percent in 1997 to 28 percent in 1998 due to the East Asian financial crisis and the attendant fall in demand and oil prices (that made road haulage of oil cheaper). The Mongolia Coal Project could not meet its revised production target of 3.5 million tons due to reduced demand and unfavorable world coal prices, even though it successfully helped the Baganuur Joint Stock Company (BJSC) install a modern mobile overhead coal removal system.

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27. This figure includes one Rehabilitation Investment Loan.

28. Russia's Oil Rehabilitation I and II projects achieved an incremental oil production of 17.3 million tons over the project period, with an international value of US\$1.5 billion, which was almost twice the investment of US\$785 million.

29. Under Thailand's Gas Transmission I and II projects, gas deliveries through the pipeline constructed by the project reached 419 billion cubic feet (bcf) by 1998 against a target of 402 bcf per year.

30. Under India's Coal Sector Rehabilitation project, the state-owned Coal India Ltd. achieved incremental coal output of 17.85 million tons against a target of 13.4 million tons, reduced employment 14 percent and increased labor productivity by 28 percent in terms of tons per man shift. The project yielded a positive expected economic NPV of US\$593 million, and a financial NPV of US\$397 million at a 16 percent discount rate.

31. Upstream activities in the gas sub-sector in Bolivia received private investments of US\$1.96 billion, and another US\$530 million was expected in 2001, yielding a 700 percent increase in Bolivia's proven gas reserves, with 14 production gas units in operation as a result of the Brazil Gas Sector Development project.

Ethiopia's Calub Energy Development project failed to attract private investment for gas production due to insufficient government interest.

### *Active Projects*

3.9 Of the 28 active projects, there were 16 SILs (oil & gas: 10; mining: 6) of which 5 (oil & gas: 4; mining: 1) had ERRs estimated at appraisal, ranging between 16 percent and 40 percent. The most recent (FY02) Project Status Reports (PSRs) rate the development outcome of all the active SILs as "satisfactory" or better, indicating that their benefits are expected to be achieved. Typical benefits from active SILs also include increases in production and productivity, and budgetary savings from closure of uneconomical facilities.

3.10 In Chad/Cameroon, four active SILs focus on different aspects of development and utilization of petroleum resources in Chad and exporting it by pipeline to a marine terminal in Cameroon.<sup>32</sup> These activities are expected to generate increased public revenues for both countries to alleviate poverty; support macroeconomic stability; and finance additional expenditures on health, education, rural development and infrastructure. The Uzen Oil Field Rehabilitation project in Kazakhstan aims to slow the decline in oil production in the Uzen field and to generate resources for reinvestment. China's Sichuan Gas Development Project aims to develop gas reserves to help reduce acute gas shortages while improving efficiency of gas production and rationalizing gas allocation. The Romania Mine Closure project aims to reduce the burden on the national budget by permanently closing uneconomic mines. Tanzania's Songo Songo Gas Development and Power Generation Project aims to develop Tanzania's natural gas reserves, to produce least-cost power generation for domestic and industrial use, in an environmentally sustainable manner.

### *Assessment*

3.11 Overall, nearly 80 percent of the completed SILs are estimated to have yielded a net benefit to the economy. The SILs that met or exceeded their ERR expectations tended to be associated with greater government commitment to project objectives and a high level of existing infrastructure (Russia I and II Oil Sector Rehabilitation projects; Thailand Gas Transmission I and II projects; and India Coal Sector Rehabilitation project), favorable commodity prices (Russia I and II Oil Sector Rehabilitation projects) and a high level of stakeholder involvement (Bosnia-Herzegovina's Emergency Gas Rehabilitation project). The less successful SILs appeared to be affected by poor government commitment (Ethiopia's Calub Gas Development project), unfavorable economic conditions and/or commodity prices (Korea Petroleum Distribution and Sector Improvement project and Mongolia's Coal project). In regard to the ongoing SILs, their latest PSRs all show a "satisfactory" rating for development outcome, which indicates that they are expected to yield a positive benefit to the economy.

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32. Chad's Petroleum Sector Capacity-Building Project and Petroleum Development and Pipeline project work to establish a framework for and to attract private investment in the petroleum sector. Cameroon's Chad-Cameroon Pipeline project seeks private sector-led development of Chad's petroleum reserves and their transport through pipelines to Cameroon for export. Finally, Chad's Petroleum and Power Engineering credit project seeks to complete the preparation of a petroleum and power project in Chad.

## **Economic Benefits of Structural Adjustment Loans (SALs), Sectoral Adjustment Loans (SECALs), and Technical Assistance Loans (TALs)**

3.12 The 23 completed and 12 active SALs, SECALs, and TALs and “other”<sup>33</sup> projects in the portfolio laid the basis for direct economic benefits through a wide variety of objectives including — private sector development, improving production levels, institutional capacity-building and policy reform, rehabilitation of uneconomic mines, and environmental cleanup. Overall, about 75 percent of the completed SALs, SECALs, and TALs projects had outcome ratings of “moderately satisfactory” or better and are estimated to have yielded a net benefit to the economy.

### **Economic Benefits from Private Sector Development**

#### ***Completed Projects***

3.13 Of the 12 completed SALs, SECALs, and TALs with private sector development components, OED estimated the outcome of 10 projects as “moderately satisfactory” or better. These projects yielded significant benefits by laying the groundwork for improving the efficiency of public enterprises by commercialization, privatization and attracting private investment. Further, over 60 percent of all completed mining projects, dealt with reducing subsidies to loss-making mines, (See paras. 6.6 to 6.13).

3.14 Privatization of three state hydrocarbon sector enterprises was successfully carried out in Bolivia.<sup>34</sup> Peru’s Privatization Adjustment Loan and Energy/Mining project privatized the state hydrocarbon enterprises and helped to open the sector to private investment in exploration and development. In Madagascar, the state-owned petroleum monopoly SOLIMA was split into several private companies.

3.15 Russia’s Coal SECAL I and II projects overcame an initially inadequate legal framework to privatize 77 percent of coal assets by 2001, which is expected to rise to 90 percent in 2002. This helped decrease coal sector subsidies by 40 percent, and initial indications of the impact on productivity are positive.<sup>35</sup> The privatization of Zambia Consolidated Copper Mines (ZCCM) was delayed due to a volatile market for copper as well as prolonged negotiations between all principal stakeholders. Poland’s Hard Coal SECAL II took some initial steps in the privatization of two coalmines, but could not make additional headway.

3.16 Under the Tanzania Mining Sector Development TA project, a modern mineral policy and strategy was prepared and approved by the government, contributing to private sector-led

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33. Includes one Emergency Rehabilitation Loan (ERL) and one Learning and Innovation Loan (LIL).

34. In Bolivia’s Regulatory Reform and Capitalization and Hydrocarbon Sector Reform and Capitalization projects, the sale of three hydrocarbon enterprises yielded US\$828 million at premiums of 97 percent — 107 percent and US\$2 billion investment in the petroleum sub-sector was expected in 1998-2000.

35. Over the period of the projects, annual coal production improved by 4 percent despite and there was a 40 percent decrease in workforce over the same period, yielding a productivity increase of 12 percent.

growth of mineral exports from US\$15 million in 1990 to US\$312 million in 2001.<sup>36</sup> The Guinea Mining Sector Investment Project supported the privatization of the management of state mining enterprises, which helped raise mining export revenues from about \$400 million to US\$500 million over the project period.

### ***Active Projects***

3.17 There were five active mining TALs with significant components to encourage the expansion of private investment in mining through policy, regulatory, and institutional reforms. These are in Mauritania (Mining Sector Capacity Building), Algeria (Energy and Mining TA), Argentina (Mining Development TA I and II), and Mozambique (Mineral Resource project).

### ***Assessment***

3.18 Privatization was politically complex in all cases. Wherever progress was made it was largely due to strong government commitment, supplemented by flexibility on part of the Bank. This is evident in Bolivia's Regulatory Reform and Capitalization and Hydrocarbon Sector Reform projects as well as in Peru's Privatization Adjustment Loan and Energy/Mining projects. Privatization of coalmines in Russia was a highly complex task carried out in a difficult political and industrial relations environment, and may not have been possible without strong government commitment and efforts at consulting important stakeholders, together with Bank flexibility in the design and implementation of the projects. On the other hand, inadequate government commitment and political consensus, apart from issues of commercial viability, appears to be behind the limited progress of privatization in Poland's Hard Coal SECAL I and II projects. The slow progress in privatizing Zambia Consolidated Copper Mines (ZCCM) can be attributed to unfavorable market conditions for copper and the difficulties in bringing stakeholders to agreement.

3.19 Tanzania and Guinea's success in attracting high levels of private investment to their mining sectors was aided by a relatively integrated approach taken by the countries toward developing an enabling legal, regulatory, and fiscal framework. Consistent government ownership and commitment was also crucial in securing positive results.

### **Rehabilitation and Mine Closure**

3.20 Over 60 percent of completed mining projects, including five completed SECALs, in Russia, Ukraine, and Poland, involved large-scale rehabilitation and/or closure of uneconomical coalmines. On a smaller scale, several small copper and chrome mines were also closed out in Albania. The economic benefits included reduced waste of resources and reduced state subsidies for loss-making mines.

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36. Under the Tanzania Mining Sector Development TA project exports rose from US\$15 million to US\$312 million between 1990 and 2001, and were expected to exceed 400 million in 2002. Revenues from export of gold rose from virtually nil to \$120 million between 1996 and 2000, and are expected to rise to US\$326 million by 2002. The positive impact of the project on the budget averages US\$5 million per year in the medium run.

3.21 As of 2001, Russia's Coal SECAL I and II led to the closure of 183 heavily loss-making mines of which 158 completed substantive closure works. As a result of these projects, budgetary subsidies for the coal sector were reduced from 1.05 percent of GDP in 1993 to 0.07 percent of GDP by 2001. Under Ukraine's Coal Pilot and Coal SECAL, over 25 percent of Ukraine's coalmines were closed and the efficiency of the remaining mines was increased.<sup>37</sup> Poland's Hard Coal SECALs I and II helped reduce the net financial loss of coal mining by 85 percent between 1998 and 2000.<sup>38</sup> In Albania, 15 small copper mines and 66 chrome mines were successfully closed or privatized.

### *Active Projects*

3.22 Two active projects are engaged in rehabilitation/closure of existing production facilities. The China Sichuan Gas project plans rehabilitation of 190 old gas wells and specified transmission and distribution systems. The Romania Mine Closure project aims to close 29 uneconomic coalmines and thereby reduce the burden of sectoral subsidies on the national budget.

### *Assessment*

3.23 Rehabilitation and closure of coalmines in Russia was a major task, which was achieved in the face of political resistance and poor industrial relations in a difficult economic situation. Government commitment, stakeholder consultation and flexibility on part of the Bank in working with the government through difficult political and financial situations contributed to the positive results. In Ukraine, favorable results were obtained under relatively less difficult conditions. The strategy of approaching Ukraine's rehabilitation/closure process cautiously, starting with the smaller-scale Ukraine Coal Pilot project and leveraging its success for the a larger Ukraine SECAL appears to have worked well. A notable feature of Poland's Hard Coal SECALs I and II was that they succeeded in reducing uneconomical production levels and excess employment without much social stress.

3.24 However, in all three countries, Russia, Ukraine, and Poland, attempts at generating alternative employment for laid-off workers in other sectors and through encouraging small industries fell far short of expectations. The implication is that the complexity of large rehabilitation/closure projects does not permit adequate attention to the demanding task of generating alternative employment, which should be the focus of projects outside of the extractive industries sector.

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37. Under the Ukraine Coal Pilot and Coal SECAL projects, coal production workforce reduced by 24 percent between 1995 and, 1999, while production reduced by only 3 percent. Fiscal benefits of preventing losses in budget are estimated conservatively at \$6 million per annum, and more than 260,000 square feet were reclaimed.

38. The Poland Hard Coal SECAL I and II projects also succeeded in reducing coal production capacity to 105 million tons per year (mtpy) and employment to 155,000 by end-2001, with both figures being somewhat short of their targets of 101 mtpy and 128,000 respectively.

## **Environmental Clean-Up**

3.25 Most of the projects had environmental components of varying magnitude and importance. Some dealt with cleanup of pre-existing environmental impacts and others were concerned with mitigating the environmental effects of new operations under the project or related projects. Only a few projects — five completed and three active — focused mainly on dealing with pre-existing or ongoing environmental impacts. These projects were expected to yield economic benefits through healthier living conditions, greater resources for productive activities, and improved productivity of resources, through reclamation of land and improving air, water, and soil quality. (See paras. 4.23 to 4.31)

### ***Completed Projects***

3.26 Five completed projects in India, Brazil, Ecuador, Thailand, and Russia focused on technical assistance for addressing environmental impacts from past or ongoing extractive industries activities. While the outcome of the project or relevant components was broadly satisfactory in India and Brazil, the objectives were only partly achieved in the Ecuador and Thailand projects, and the Russia project could not make much headway.

3.27 India's Jharia Mine Fire Control TA project attempted to formulate a strategy to deal with widespread mine fires that could mitigate losses from damage to infrastructure and property and prevent the need for large-scale future involuntary resettlement of local communities. The Ecuador Mining TA addressed the environmental impacts of artisanal and small mining (ASM) to reduce potentially large losses to downstream farming and other activities, but its progress was affected by an Inspection Panel investigation into alleged violations of safeguards in another component of the project (this is discussed below in para. 4.21).

3.28 Thailand's Clean Fuels and Environmental Improvement sought to help the Bangchak Petroleum Public Co. Ltd. Oil Refinery (BCP) meet the government's new gasoline and diesel specifications, as well as to reduce refinery emissions and enhance safety. The objectives were achieved for diesel, but the gasoline component was not pursued because cheaper gasoline of required specifications became available from other sources. During the project, BCP obtained ISO 14001 certification for environmental management. Objectives relating to reducing emissions and enhancing safety were partly achieved through the installation of a sulfur recovery plant.

3.29 In Brazil, the Environmental Conservation and Rehabilitation (with Companhia Vale Do Rio Doce, or CVRD) project included a component for reclaiming areas degraded by mining and waste deposits. The project helped construct a new tailing pond in Itabira, enlarge tailing ponds in Carajas, and improve tailing ponds in other mines, while supporting several studies related to environmental and social monitoring. The project also contributed to CVRD achieving ISO 14001 certification for several of its mines.

3.30 The Greenhouse Gas (GHG) Reduction in Natural Gas project in Russia offered important technological and methodological support to regional and local authorities in developing environmentally sound investment programs in the natural gas supply and utilization system that would result in a decrease in greenhouse gas emissions. However, the

project could not make much headway due to lack of commitment from the implementing agency, Gazprom, although a separate company for working on assessing CO<sub>2</sub> emissions was established and continues to function.

### ***Active Projects***

3.31 Three active projects focus primarily on environmental issues. India's Coal Sector Environmental and Social Mitigation project (CSESMP) was carved out from the major Coal Sector Rehabilitation project (CSR) to manage the environmental and social impacts from rehabilitation and restructuring India's coal sector. The Oil Spill Contingency project for the Western Indian Ocean Islands of Comoros, Madagascar, Mauritius, and Seychelles aims to protect the environmental integrity of the coastal and marine ecosystems by helping the countries ratify and comply with international conventions and protocols that require states to develop and maintain adequate capacity to respond to oil spill emergencies. Russia's Emergency Oil Spill Mitigation project aims to stabilize the oil spill in the Pechora River Basin and prevent further ecological damage in the area.

### ***Assessment***

3.32 Among the projects that were not exclusively focused on environmental issues but contained significant environmental components, the Brazil Gas Sector Development project contained provisions for stakeholder consultation and community participation that gave credibility to environmental initiatives and improved the chances of their success. Brazil's experience thus stood in contrast to the Ecuador and India projects in this respect. Another feature worth noting is that while many projects in the portfolio contained significant environmental components, almost none of them explicitly factored the environmental benefits into their economic cost-benefit analysis. A notable exception was Brazil's Gas Sector Development project, which applied an environmental premium for the displacement of more polluting fuels by natural gas in its economic analysis.

### **Artisanal and Small-Scale Mining**

3.33 Among the Bank projects reviewed in this study, Artisanal and Small-Scale Mining (ASM) issues (see Box 3.1) occur to a significant extent in 3 completed projects in Ecuador, Ghana and Tanzania, 3 active projects in Burkina Faso, Madagascar and Mozambique, and to a lesser extent in another active project in Zambia. The outcome of the ASM-related objectives in the Ecuador project is considered satisfactory while it is only moderately satisfactory in the projects in Ghana and Tanzania.

3.34 Ecuador's Mining TA project addressed production, health, safety and environmental issues relating mainly to ASM gold production. During the project, exploration activities grew significantly and yielded a significant increase in gold production (1 ton/year to 7 ton/year) in formal ASM activities. The project helped in achieving registration of ASM, reducing ASM-related contamination, increasing environmental awareness among miners and other stakeholders including local government and civil society, and increased environmental management capacity of ASM and government. Pilot tailings dams were built or were being completed, and use of containment facilities for tailing was spreading. Use of

mercury was being progressively replaced by better-controlled cyanide operations. Monitoring of mining-related health issues was put in place through local management committees.

3.35 In contrast, Ghana's Mining Sector Development and Environment project's achievements in respect of ASM are considered moderately satisfactory largely because the project did not sufficiently recognize the poverty-driven nature of ASM, and failed to take an integrated view of the problems of the sub-sector. The project contributed to some extent in improving efficiency and working conditions of the targeted small-scale miners. This was done through testing of improved equipment, provision of improved geological information, and providing some basic training and providing marketing services. Little progress was made on the health, safety and environmental issues.

3.36 Under the Tanzania Mineral Sector Development TA project, laws and regulation for ASM were provided for under the new Mining Act of 1998. While extension services were provided to ASM, only one of eight pilot demonstration plants was undertaken due to higher than anticipated costs. Significant progress was made in involvement of local communities and miners in addressing mineral rights and mining "rushes" through stakeholder meetings, though there is no mention of a long-term mechanism having been created for the purpose. Progress was reported in introducing practices to decrease adverse environmental impacts involving better mining equipment and improved tailings disposals. The Tanzania Women Miners' Association was formalized for advocacy of women's miners issues, and significant stakeholder consultation — including government, miners, representatives from local communities and traders — also covered ASM issues including environmental and safety concerns. An integrated approach is necessary for the mineral sector because of the strong interrelationships between a stronger legal and regulatory and fiscal framework, improved information systems, promoting investments and the interests of small-scale miners and local communities.

3.37 Among the active projects, Burkina Faso's Mining Sector Capacity Building and environmental Management Project has an ASM component that will help design and deliver technical advice, geology information and extension services to ASM, assess means of evaluating financing proposals of ASM, promote identification, development and dissemination of SM mining equipment through private sector delivery mechanisms and implement an environmental sensitization and awareness campaign amongst ASM communities.

3.38 Mozambique's Mineral Resources Management Capacity Building Project supports an integrated TA program to enhance technical yields, reduce current severe impact on the environment, improve living conditions of artisanal miners and increase tax revenues. It also supports the Mining Directorate for designing and delivering technical advice, geology information and extension services to ASM, including establishment of a pilot training center for ASM, and to build capacity for the management of social issues in the sector including a health hazards campaign. The Madagascar Mining Sector Reform Project seeks to complete sector reforms that help integrate ASM into the formal economy, ensuring a real and sustainable contribution to economic growth, while identifying and adopting appropriate mechanisms to facilitate the development of ASM to improve the social, welfare, health and environmental conditions of artisanal mining. Zambia's Economic Recovery and Investment

Promotion TA project aims to strengthen the Ministry of Mines and Minerals in respect of its capability to administer and supervise the mining sector, including small-scale miners.

### *Assessment*

3.39 The Ecuador project has been rich in lessons on how to address ASM issues, demonstrating a need to move from a technical approach to a more integrated program — ensuring an appropriate legal and fiscal framework, involving miners and local communities in decision-making, considering environmental and social aspects at the project design stage, and enforcing them promptly. Ghana’s Mining Sector Development and Environment project’s achievements in respect of ASM are considered moderately satisfactory largely because the project did not sufficiently recognize the poverty-driven nature of ASM, and failed to take an integrated view of the problems of the sub-sector. The Tanzania experience also underlines the need for an integrated approach for the mineral sector because of the strong interrelationships between a stronger legal and regulatory and fiscal framework, improved information systems, promoting investments and the interests of small-scale miners and local communities.

#### **Box 3.1: Artisanal and Small-Scale Mining**

Nearly 13 million people are involved in artisanal and small-scale mining (ASM) worldwide, with a high proportion of women (10 to 45 percent) and children (5 to 30 percent) in several countries. ASM production accounts for 15–20 percent of the value of the world’s non-fuel mineral production — and as much as 90–100 percent in some countries. The majority of earnings from ASM, especially artisanal mining are used for subsistence. Being largely in the informal sector (50 percent), artisanal and small-scale miners often have no legal rights to mine, do not pay taxes, and are prone to exploitation by middlemen. In general, ASM is characterized by poor standards of safety and health, and greater environmental cost per unit of output than large-scale mining activities.

Developmental priorities for ASM are improving the legal and regulatory framework, investing revenues for sustained benefits, avoiding or mitigating negative environmental and social impacts, encouraging alternative economic activities, adopting a gender-sensitive approach, ending child labor, and ensuring good relationships between miners and other stakeholders.

In Ghana, upon advice from the Bank, gold production by small-scale artisanal miners was legalized in 1989 by passage of the Small-Scale Mining Law. The establishment of legal purchasing arrangement initially by a public and later by private buying agents offering world prices for gold and diamonds to artisanal miners was the result of active policy dialogue with the Bank.

Ecuador’s Mining Development and Environmental Control Project helped to formalize most of the country’s ASM activities by granting title to 166 out of 169 ASM associations that existed before 1995. This may have contributed to the absence of land invasions by informal miners in the country in recent years. Currently, 99 percent of ASM enterprises in the country have presented environmental impact assessments (EIAs) or environmental management plans (EMPs) either individually or through associations. The project helped demonstrate the feasibility of reducing ASM-related contamination, succeeded in promoting change to less-polluting processing technologies, and increased environmental health and safety awareness among miners and other stakeholders.

Source: Mines and Minerals for Sustainable Development (MMSD) 2002; Country Case Studies; World Bank

### **Conclusions and Implications for Further Work**

3.40 Based on the portfolio review, about 80 percent of the Bank’s extractive industries projects had moderately satisfactory or better outcomes and are expected to have yielded positive economic benefits. Overall, 73 percent of the ICRs of completed extractive industries projects contained at least some *ex-post* quantification and valuation of the benefits, but only 39 percent had a re-estimated ERR or NPV, and the rest do not discuss the cost effectiveness of achieving the objectives.<sup>39</sup> Based on an evaluation of the feasibility of additional economic analysis, this share could have been raised to about 89 percent. While the project’s economic returns only constitute an intermediate outcome in the transformation of mineral wealth into sustainable development, the adequate reporting and validation of project benefits, in line with Bank policy, constitutes the basis for most further evaluation, and should be an essential component in the Bank’s accountability reporting. Some improvement in this area would also help the Bank address the perception that the economic benefits of the projects may have been outweighed by adverse environmental and social impacts.

3.41 Aside from the reporting issue, the main lesson that emerges is that projects with satisfactory outcome ratings tended to be associated with greater government commitment to project objectives and adequate infrastructure (India Coal Sector Rehabilitation; Russia I and II Oil Sector Rehabilitation; and Thailand Gas Transmission I and II), favorable commodity prices (Russia I and II Oil Sector Rehabilitation), and a high level of stakeholder involvement (Bolivia-Brazil pipeline and Bosnia-Herzegovina’s Natural Gas System Reconstruction projects). The less successful projects appeared to be affected by poor government commitment (Ethiopia’s Calub Gas Development project), and unfavorable economic conditions or commodity prices (Korea Petroleum Distribution and Sector Improvement project and Mongolia’s Coal project). These lessons are broadly consistent with the Bank’s experience in other sectors.

## 4. From “Do No Harm” to Doing Good

### INTRODUCTION

#### Environmental and Social Impacts

4.1 The potential benefits from the extractive industries have often been undermined by negative environmental and social impacts. Negative *environmental* impacts from oil and gas activities may result from leakages and spills, flaring of excess gas, and the opening of access to new areas where settlement and deforestation can occur. Mining activities may be associated with deforestation, soil erosion, contamination of surface and groundwater from toxic wastes, and mine tailings and coal mine fires. In addition to the damage from ongoing projects, closed and abandoned projects often leave a legacy of clean-up costs that no one may be willing or able to pay.

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39. There is no reason to believe that the performance of extractive industries projects in this regard is different that that of projects in other sectors.

4.2 Negative *social* impacts may arise from the need to resettle local populations, including those of indigenous peoples, or from disrupting traditional lifestyles, to make way for extractive industries activities. Other social impacts can follow after resources are exhausted or have become uneconomical to extract, resulting in unemployment and scaled down or abandoned infrastructure. On the whole, these issues tend to emerge more prominently with mining than petroleum projects, given the higher employment generated at the local level, and their greater exposure to environmental, health and safety hazards.

### **Bank's Safeguards Framework**

4.3 Over the past two decades, the Bank has developed a comprehensive framework of safeguard policies<sup>40</sup> designed to mitigate the potential negative environmental and social impacts of the projects that it supports, that is, “do no harm.” To promote the implementation of safeguards beyond Bank-supported projects to the entire economy, an important aspect of the Bank's strategy involves strengthening of the related policy and institutional framework. As a complement to the safeguards, the Bank, in 1993, established an Inspection Panel to provide a mechanism for independent review of the Bank's consistency with its policies.

## **MONITORING CONSISTENCY WITH SAFEGUARD POLICIES**

### **Reporting on Safeguards Implementation**

4.4 Of the completed projects, 11 (oil & gas: 9; mining: 2) came under Category A of the Bank's Operations Policy 4.01 on Environmental Assessment (EA). Category A projects are required to have a full Environmental Assessment. In Category B — for which EAs are not mandatory — there were 17 projects (oil & gas: 6; mining: 11). The rest of the projects came under Category C as environmentally benign projects.

4.5 Among the active projects there were 6 Category A projects (oil & gas: 4; mining: 2) and 4 category B projects (all in mining).

4.6 The Bank's involuntary resettlement policy (OP 4.12) was triggered in six projects — with two of them involving relatively small numbers. The indigenous people's policy (OD 4.20) was implemented in one completed and one active project.

4.7 A major difficulty in undertaking a desk review of the portfolio's consistency with safeguards is the low level of reporting and discussion on issues relating to safeguards in most ICRs. Of the 11 Category A completed projects, only 7 provided a rating for their environmental performance in the ICRs. Of those, 6 ICRs have at least some discussion of performance on safeguard issues, and only one has a substantial discussion. In respect of completed projects that contained issues bearing on Involuntary Settlement Policy, all were

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40. The Bank has 10 safeguard policies: 8 deal with environmental and social concerns (OP/BP 4.01, *Environmental Assessment*; OP/BP 4.04, *Natural Habitats*; OP 4.09, *Pest Management*; OP/BP 4.12, *Involuntary Settlement*; OD 4.20, *Indigenous Peoples*; OP 4.36, *Forestry*; OP/BP 4.37, *Safety of Dams*; and OPN 11.03, *Cultural Property*) and 2 deal with legal matters (OP/BP 7.50, *Projects on International Waterways*, and OP/BP 7.60, *Projects in Disputed Areas*).

reported to have been satisfactorily implemented. To obtain a clearer picture of these issues, a special review of the project portfolio is underway to assess the reliability of the Bank's safeguards monitoring and implementation processes. This process will be completed for Phase II and is expected to result in useful findings and recommendations on how the Bank can further strengthen the implementation of safeguards.

### **Monitoring Environmental and Social Impacts**

4.8 Of the 28 completed projects in Categories A and B, 13 projects (Category A: 10; Category B: 3) attempted some level of monitoring of environmental and social impacts. Three of them — in Brazil, Ukraine, and Poland had specific provisions for independent monitoring of environmental and social impacts, which were successfully implemented. Seven other projects in Bangladesh, Ecuador, Korea, Russia, and Thailand had plans for monitoring specific impacts, but, with the exception of two projects, little follow-up resulted.

4.9 The Brazil Gas Sector Development project had an independent supervision and monitoring system under which environmental and supervision audit reports were prepared every two months, and involved local communities. The Ukraine Coal Pilot project conducted participatory monitoring of various social impacts with affected parties through an independent institution.<sup>41</sup> Poland's Coal SECALs I and II conducted a detailed survey of beneficiaries and stakeholders (see Box 4.1).

4.10 Provisions for stakeholder consultation and participation that were built into the project design and extended during implementation formed a strong basis for monitoring and evaluation of environmental issues in the Brazil Gas Development Project. There were no similar provisions built into the Bangladesh Gas Sector Development project or Korea's Petroleum Distribution project, whose performance in monitoring and evaluation was less satisfactory. The experience with monitoring and evaluation in the Thailand Transmission I and II projects was satisfactory in spite of no apparent provisions for stakeholder consultations, possibly due to existing institutional mechanisms and relatively less complexity of the project.

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41. Important issues addressed included: i) receipt of severance pay; ii) availability of training and assistance for re-employment; and iii) adequacy level of health and education services. Two social surveys during midterm and at the end of the project show that unemployed miners and miner pensioners do not receive unemployment benefits in time or in full.

### **Box 5. Public Consultation and Feedback: The Poland Hard Coal Sector Adjustment Loans I and II**

The Poland Hard Coal Sector Adjustment Loans I (1998-2000) and II (2001-2002) assisted the government's reform program in the hard coal sector and helped start the process of privatization, which was predominantly state-owned, to rationalize and improve corporate governance arrangements in the sector; help mitigate the effects of industry reform on local communities, improve environmental conditions, and to provide support for retraining and improving the employment prospects of workers leaving the industry. A survey of stakeholders and beneficiaries was carried out to assess how successful the project had been in meeting its objectives. A total of 149 responses were received, 60 percent of them miners, but also including coal holding companies, government ministries, suppliers, and investors: The general message from the survey is that the miners were satisfied with the magnitude of the compensation package though finding new employment was still a problem. Illustrative questions and answers from the survey on the performance of the reform program are as below:

<b>Questions</b>	<b>% Agree</b>
1. Was the environment improved through cleanup of old/abandoned mining sites?	63
2. Did capacity restructuring provide additional facilities to the local government?	83
3. Did the environmental aspect of the program reduce pollution?	70
4. Did the program draw attention to the major environmental issues in the sector?	82
5. Did the program raise awareness of the potential of the sector for privatization?	73
6. Was the understanding of the benefits of privatization improved?	34
7. Was WB's contribution to program implementation "moderate" or better?	44

Continuing six-monthly surveys Under Poland's SECAL II showed that 60 percent of the miners viewed the miners' separation package (MSP) positively while most of the others were concerned about lack of alternative employment opportunities. Of those seeking to return to the workplace 52 percent have been successful, while 85 percent advise that they have sufficient funds to support their families.

4.11 As discerned from the project ICRs, there was little or no follow-up of monitoring plans in the Bangladesh Gas Infrastructure project (environmental and social assessment), Ecuador Mining TA project (mining pollution monitoring program), Korea's Petroleum Distribution project (environmental impacts on ecosystems, land use, air and water quality), or Russia's Oil Sector Rehabilitation I and II projects (pre-existing environmental impacts).

#### ***Active Projects***

4.12 A review of the latest Project Status Reports (PSRs) for active projects shows only one project reported to be less than satisfactory in consistency with safeguard policies. However, PSRs for almost half of the active projects indicate that safeguard policies were not applicable or have not recorded any response. One active project — India's Coal Sector Environment and Social Mitigation Project is currently under investigation by the Inspection Panel for reported safeguards violations. Additionally, the Chad-Cameroon Pipeline project has come under criticism from environmentalist groups for negative environmental, social, and governance impacts in the two countries. However, the latest PSRs for the project have rated compliance with safeguards as "satisfactory."

## **Beyond Consistency with Safeguards: Doing Good**

4.13 An important aspect of the Bank's approach to development assistance involves the pursuit of positive environmental and social impacts beyond strict consistency with safeguards, such as the remediation of pre-existing conditions resulting from past mining and petroleum activities, and the strengthening of the policy and institutional framework to promote the implementation of safeguards across the entire economy. Many projects have such components, and they will be reviewed in turn.

## **Positive Environmental Impacts from Completed Bank Projects**

4.14 In the portfolio of 48 completed projects, 5 completed projects produced positive environmental impacts from new activities undertaken by them. One active project is expected to have positive environmental externalities.

### ***Completed Projects***

4.15 Under Brazil's Gas Sector Development project, the creation or improvement of 13 national parks<sup>42</sup> was initiated. This project, as well as Thailand's Gas Transmission I and II projects made available larger amounts of environmentally acceptable fuel — natural gas — with consequent benefits for air quality and health. Thailand's Clean Fuels and Environmental Improvement helped the Bangchak Petroleum Public Co. Ltd. (BCP) meet the government's new cleaner diesel standards, as well as to reduce sulfur emissions from the refinery, though the results were less than expected for cleaner gasoline and reducing other emissions. Bosnia-Herzegovina's Emergency Gas Rehabilitation project helped with improvements in safety and energy efficiency and reduction in environmental pollution through upgrading outmoded gas distribution systems.

### ***Active Projects***

4.16 Among active projects, the China Sichuan Gas Development and Conservation project is expected to reduce coal consumption through increased and more efficient supply of gas, with better recovery systems, reducing leakages, with the attendant environmental benefits in terms of reduced methane and other greenhouse gas emissions.

### ***Assessment***

4.17 There are only a few significant instances of positive environmental impacts arising from the portfolio of projects that was reviewed. In the few cases mentioned above, the only positive environmental impact introduced by design into the project is the

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42. A significant ecological compensation program was included involving the creation or considerable improvements to 13 national parks. Brazilian law requires 0.5 percent of project outlay for ecological compensation which was complied with. GTB and TGB (the Bolivian and Brazilian pipeline companies) were awarded the International Association of Impact Assessment award for 2001 for environment-friendly design and construction of pipeline.

creation/improvement of certain national parks in Brazil. The other benefits were incidental to the substitution of gas for other, more polluting fuels.

### **Negative Impacts from Completed Bank Projects**

4.18 Negative environmental impacts as a result of new activities under completed Bank projects are reported in at least two instances, but were of low magnitude. Aside from these negative impacts reported in the ICRs, the Bank's Inspections Panel (IP) received specific complaints on safeguard violations in two cases: Ecuador's Mining TA project and India's Coal Sector Environment and Social Mitigation project. While the IP has reported on the Ecuador Case, the Indian project is still under investigation.

#### ***Completed Projects***

4.19 Gas leakages and possible fires, and effects of drilling wastes on flora and fauna were anticipated in Equatorial Guinea (Petroleum TA II project) and recommendations for safety and environmental improvements are being gradually implemented, including the use of gas that was formerly being flared. Some surface groundwater contamination and soil erosion was expected in the Bangladesh Gas Infrastructure Development Project, though no mention of monitoring of actual impacts is made in the project ICR.

4.20 Under Ecuador's Mining TA project, complaints against violations of safeguards contained in Bank's Operational Policy 11.02 on Wildlands and OD 13.05 on Project Supervision centered on the likely effects of geological mapping activities in a protected area of the country. An IP investigation in May 2000 concluded that the project was substantially consistent with the Bank's safeguard policies, but stressed the need for a more robust EA process. The Bank accepted the IP's position that a more expanded and robust EA covering processing, geographical scope and baseline data, as well as greater consultation could have been undertaken during preparation. The IP process also led to indirect positive outcomes, including improving consultation and participatory processes with local communities.

4.21 The other complaint on safeguards violations is related to India's Coal Environment and Social Mitigation project (CSESMP) along with its companion project — the Coal Sector Rehabilitation project (CSR), and is the subject of an ongoing Inspection Panel (IP) investigation. In the complaint, the CSR and CSESMP (which was designed to mitigate the complex environmental and social impacts that were expected to accompany the CSR) are alleged to have been in violation of various provisions of OD 4.01 (Environmental Assessment), OD 4.20 (Indigenous Peoples), OD 4.30 (Involuntary Resettlement), BP 17.50 (Disclosure of Operational Information, OPN 11.03 (Management of Cultural Property in Bank-financed project), and OD 13.05 (Project Supervision).

#### ***Active Projects***

4.22 It is too early to assess whether any negative environmental impacts have arisen for active projects, due to the partial nature of information from PSRs and the possibility that the picture may change during the remaining duration of the project.

## Addressing Pre-existing Environmental Conditions

4.23 Nine completed projects (oil & gas: 5; mining: 4) provided assistance for addressing environmental impacts from past or ongoing extractive industries activities, while other completed projects approached them as part of larger efforts in economic transition. Based on the generally limited information provided in the ICRs, pre-existing environmental conditions appear to have been addressed in a moderately satisfactory or better manner, in all but two cases.

### *Completed Projects*

4.24 In the oil and gas sub-sector, important pre-existing pollution issues that were addressed include:

- controlling drilling wastes and reducing environmental impacts from existing oil and gas operations (Russia's Oil Rehabilitation I and II projects);
- controlling and mitigating pollution from refinery activities (Thailand's Clean Fuels and Environmental Improvement Project);
- controlling pollution from leaking pipes and storage facilities (Tanzania Petroleum Rehabilitation project); and
- addressing the impact of petroleum development in an area of extreme environmental sensitivity near the Caspian Sea (Kazakhstan Petroleum TA project).

4.25 In the Russia projects, several measures that were proposed at project appraisal, including rehabilitation of oil pipelines and equipment and controlling drilling wastes, could not be taken up due to the poor financial condition of the oil producers' associations. Results from the Thailand project were more encouraging, with the Bangchak Petroleum Public Company Ltd earning ISO 14001 environmental certification. Tanzania's Petroleum Rehabilitation project made progress in reducing pollution from leaking pipes and storage facilities. Under the Azerbaijan Petroleum TA, the effects of petroleum resources in the Caspian Sea area were studied in detail but more work is required to clarify mitigation efforts.

4.26 In the mining sub-sector, pre-existing pollution issues included:

- water and air pollution from mine tailings and airborne particles (Peru's Privatization Adjustment and Energy/Mining TA projects; Poland Hard Coal SECALs I and II; Mongolia's Economic Transition Support project and Coal Project; Guinea Mining Sector Investment Project);
- environmental impacts on surrounding communities (Russia Coal SECAL I and II; Ghana Mining Sector Development and Environment project);
- contamination from activities of artisanal and informal miners (Ecuador's Mining TA and Peru's Energy/Mining TA);
- a strategy to control widespread mine fires that were affecting local infrastructure, farmland and habitation, and could potentially dislocate hundreds of thousands of people in India's Jharia coalfields area (Jharia Mine Fire Control TA project);

- and passage of a new environmental code for mining to ensure cleanup of existing pollution and higher guidelines for new foreign investors (Peru's Energy/Mining TA project).<sup>43</sup>

4.27 Good progress was made in Peru where contamination levels were reduced by 15-20 percent in the project period, and Poland's Hard Coal SECALs I and II helped to reduce saline water and solid discharge from coalmines by 21 percent and 29 percent respectively. Less progress appears to have been made in Mongolia's Economic Transition project while under the Mongolia Coal Project, the Baganuur Joint Stock Company (BJSC) implemented an Environmental Management Program and created a small Environmental Management Unit. The company implemented the first land reclamation program since 1999, and continues to reclaim at a pace that equals spoils creation. Under the Guinea Mining Sector Investment Project, environmental audits of all mining operations were carried out.

4.28 In the Russia SECAL I and II projects, under the mining closure program, some tasks, including environmental mitigation works, social infrastructure repair, and relocation of houses damaged in mining, received little financing. The Russia Coal Implementation Assistance project (IAP) that accompanied the SECAL I and II projects carried out environmental audits at closing of mines and financed workshops on clean coal technologies. In Ghana, three pilot areas were reclaimed,<sup>44</sup> and a "green communities" plan was launched to provide communities around mining areas with water and sanitation and improving socio-economic conditions of the communities, although there no specific progress is reported under the plan.

### *Active Projects*

4.29 Among active projects, there are 5 oil and gas projects and 3 mining projects with significant provisions for dealing with pre-existing environmental impacts. In Kazakhstan's Uzen Oil Field Rehabilitation project, the project aims to strengthen Uzenmunaigas's environmental monitoring and management systems, and undertake physical investments for subsurface rehabilitation, surface facilities rehabilitation, and environmental protection and remediation. Romania's Petroleum Sector Rehabilitation project assists the country in implementing abatement measures to environmental pollution in the sector. Russia's Emergency Oil Spill Mitigation project seeks to stabilize the oil spill in the Pechora River basin and reduce damage to the fragile ecology of the area and the people affected by it. Under India's Coal Sector Environmental and Social Mitigation Plan, Environmental Action Plans and Rehabilitation Plans were planned for 25 mines receiving rehabilitation assistance under the Coal Sector Rehabilitation Project, but progress has been stalled in light of the ongoing Inspection Panel investigation (see para. 3.24).

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43. Under Peru's Privatization Adjustment Project, it is reported that in the wake of privatization, the contamination levels were reduced by 15-20 percent during 1996-98 and the larger enterprises committed themselves to invest \$1 billion through 2006 in pollution abatement.

44. However, no progress was reported on a master plan for the rehabilitation of the degraded mine sites at Akwatia in Ghana as a pilot for promoting and implementing integrated mine decommissioning plans and programs.

4.30 The Madagascar Mining Sector Reform project aims to identify and address environmental and social impacts from mining, and the Argentina Mining TA will carry out environmental and social-economic baseline studies. In Romania's Mine Closure project, effective procedures for a technically and environmentally sound approach to formally closing uneconomic mines includes addressing accumulation of acid underground water buildup, preventing oil leakages, remediation that restores surface lands, rehabilitation of waste dumps, and protection of surface soil.

### ***Assessment***

4.31 Dealing with pre-existing environmental impacts tended to be given less priority in countries facing poor economic and financial conditions and where the overwhelming priority was to restore production levels and earn import revenues. Pre-existing environmental impacts also got little attention when the environmental components were a relatively small part of the overall project. Both these factors were evident in Russia's Oil Sector Rehabilitation I and II projects. In countries where the economic and financial situation was relatively better (Poland's Hard Coal SECAL I and II) and in cases where environmental components were larger relative to the entire project (Mongolia Coal project) and where stakeholder participation was higher (Tanzania Mineral Sector Development TA), there was greater progress on dealing with pre-existing environmental impacts.

### **SOCIAL IMPACTS**

4.32 Rehabilitation of old and inefficient mines and displaced workers was undertaken satisfactorily in coal mining related projects in Russia, Ukraine, and Poland. Involuntary resettlement issues arose in only three projects, and were reported to have been managed satisfactorily.

### **Social Impacts from Rehabilitation and Mine Closure**

4.33 Under the Russian Coal SECALs I and II, maintenance and operation of social assets was de-emphasized due to more broad-based programs at the federal level. The project was relatively successful with respect to social protection of individuals, payments of wage arrears, severance for laid-off workers, and provision of disability to workers, as borne out by follow-up surveys. The community development program helped create new jobs (though small in proportion to the number of jobs lost), a majority of which was confirmed through a survey to be sustainable. Other efforts under the Community Development Program (CDP) — re-training and small business support, among others — were constrained by insufficient finance and capacity.

4.34 In Ukraine, nearly 70 uneconomical coalmines (or 25 percent of the country's coal mines) were closed while largely mitigating their social and environmental consequences,<sup>45</sup>

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45. The Ukraine Coal Pilot Project helped close three mines efficiently while taking care to fully implement the agreed environmental mitigation measures. The Ukraine Coal SECAL helped close more than 70 coal mines (nearly 25 percent of Ukraine's mines) and mitigate the worst of the social consequences of the mine closure program, but was unsuccessful in continuing the social infrastructure previously maintained by the closed

and improving overall productivity (Coal Pilot and Coal SECAL). Poland's Hard Coal SECALs I and II similarly helped close uneconomical mines and decrease employment without any significant social stress.<sup>46</sup> Follow-up surveys showed that 60 percent of the miners viewed the Miners Social Package (MSP) positively, while most of the others were concerned about the lack of alternative employment opportunities. Of those seeking to return to the workforce, 52 percent have been successful while 85 percent advise that they have sufficient funds to support their families (see Box 4.1). More recently, however, there is reported to be decreasing interest among coalmine workers in availing themselves of the MSP due to a slowdown in employment opportunities in other sectors. Turkey's Privatization Implementation Assistance & Social Safety Net Project did not undertake any substantial social measures, since the privatization program for state-owned enterprises including some mining enterprises, failed to make much headway, because of insufficient government commitment and objectives that proved too ambitious.

### *Active Projects*

4.35 Three active projects in India, Romania, and Turkey deal with social impacts in the mining sector. India's Coal Sector Environment and Social Mitigation Project includes a component of social remedial action programs for the four coal mine projects that have received Bank support in the past. Romania's Mine Closure project identifies the measures most effective in mitigating social hardships resulting from the sector's restructuring, and assists in creating diversified employment opportunities for redundant labor. Turkey's Privatization Special Support program involves severance and related payments to workers displaced because of the privatization of state-owned mining enterprises. The second component provides labor re-deployment services to workers who have been displaced because of privatization, and including secondary layoffs, and assists them in rapidly re-entering the labor market.

### *Assessment*

4.36 While the physical achievements under the important coalmine rehabilitation projects in Russia, Ukraine, and Poland were generally positive, the results on the social front have been mixed. The area of greatest concern was generating alternative employment for workers who lost their jobs in the rehabilitation and mine closure process. It is recognized that the

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mines, and in generating sufficient new long-term employment opportunities. The workforce declined by 24 percent between 1995 and 1999, but production declined by only 3 percent. However, the sustainability of the program is greatly dependent on the government's continued commitment for further rationalization of the sector. The Coal Pilot project provided subsidies for reemployment of more than 1000 ex-mine workers. The project also made a significant attempt to provide micro-credit for new productive activities creating 180 new jobs and temporary employment to 684 ex-miners who participated in 111 public works.

46. Under the Hard Coal Structural Adjustment Loan (1999), substantial employment restructuring, closure of uneconomical mines and environmental improvements were achieved. Employment was reduced by 83,000 workers to 160,000, through compensation called Miners Social Packages, which were generally acceptable to the workers. Five mines were liquidated and production was stopped at 8 more mines. Pollution from saline water discharges and solid waste were decreased by 15 percent and 17 percent respectively for the first nine months of 1999 compared to a similar period during 1997.

difficult economic transition in Russia and Ukraine made it very hard to make progress in generating alternative employment, and it is not clear if these issues were addressed through projects in sectors other than the extractive industries. Another area of concern was finding alternative funding sources for infrastructure for social services that previously had been supported by the state mining enterprises. These issues are especially important in the extractive industries sector and deserve focused attention through targeted Bank projects in order to consolidate the gains from rehabilitation and mine closure.

## **Resettlement**

4.37 On basis of information provided in the project ICRs, only 4 completed projects and 2 active projects had elements of involuntary resettlement. Brazil's Gas Sector Development project addressed resettlement needs through a US\$36 million Environmental and Social Management Plan as well as right-of-way restoration and re-vegetation programs along relevant portions of the pipeline in Brazil and Bolivia. About 40 persons affected by Thailand's Second Gas Transmission Project, and 12 families affected in Bangladesh by the Gas Infrastructure Development project were compensated according to the Bank's guidelines.

4.38 Under India's Jharia Mine Fire Control project, an Environmental Management Plan resulted in the Government of India committing US\$9 million equivalent for a pilot resettlement program for 4,660 people that may ultimately be extended to 22,300 families. Among active projects, the Chad-Cameroon pipeline project includes a Resettlement Plan to address the resettlement issues arising from construction of the Chad-Cameroon pipeline. Tanzania's Songo Songo Gas Development and Power Generation Project involves resettlement and compensation for about 155 families for which a Resettlement Plan has been prepared.

## ***Assessment***

4.39 Provisions for participation and consultations with local communities and other stakeholders appear to have contributed to the satisfactory implementation of the Environmental and Social Management Plan under Brazil's Gas Sector Development project. Resettlement needs under the Thailand and Bangladesh projects were of relatively low magnitude and easily managed. India's Jharia Mine Fire Control project appears to have laid the groundwork for what is likely to be a large and complex resettlement exercise. Resettlement issues were not a major feature in the portfolio of projects reviewed. To confirm this finding, a rigorous consistency check of the project portfolio is underway to assess the reliability of the Bank's safeguards monitoring and reporting processes. This process will be completed for Phase II and is expected to result in useful findings and recommendations on how the Bank can further strengthen the implementation of safeguards.

## **Impacts on Indigenous Peoples**

4.40 There were 4 completed projects and 1 active project involving indigenous peoples issues. Under the Brazil Gas Sector Development project, ownerships titles for indigenous peoples affected by the pipeline were implemented on the Bolivian side and well as the

Brazilian side, under an Indigenous Peoples' Plan as required by the Bank's Indigenous Peoples' Policy (OD 4.20). The project established a trust fund of US\$1 million to provide incremental annual revenues for the Capitania de Alto y Bajo Izozog,<sup>47</sup> for improving the protection and management of the northern border of the Kaa-Iya (Gran Chaco) National Park, an ecologically significant protected area, through which part of the pipeline is routed. An Environmental and Social Management Plan (EMP) was prepared, costing almost US\$36 million. It included planning and agreeing on compensatory measures for upstream and long-term impacts due to operation of the pipeline.

4.41 In both Bolivia and Brazil, the Brazil Gas Sector Development project activities resulted in increasing dialogue and collaboration between the private sector investors and the local communities and civil society organizations. This has resulted in an innovative monitoring system that ensures the participation of local communities and civil society representatives in the environmental monitoring process. During implementation, the auditing functions related to social areas were assigned to a newly created position — the ombudsman — to strengthen the protection of individual and community rights. Executive summaries of the independent environmental audits were shared with NGOs and other interested parties, ensuring transparency and addressing civil society concerns. Close institutional partnerships are evident between the World Bank, the Inter-American Development Bank, and the Andean Development Bank, and the ICR states that this ensures consistent environmental and social requirement and joint reviews.

4.42 The Brazil Environmental and Conservation project provided a loan to a mining parastatal Companhia Vale Do Rio Doce (CVRD) to formulate a program of subprojects to reduce the dependency relationship between a community of Amerindians and CVRD. The project also aimed for continued demarcation of Amerindian territories, although Fundação Nacional do Índio (FUNAI), the government agency in charge of demarcation, was not a party to the loan agreement. CVRD was privatized after effectiveness, delaying project implementation. CVRD adopted a policy statement on indigenous peoples later than planned, but found this policy difficult to implement because neither the company nor the indigenous peoples found it easy to change the dependency relationship formed in the late 1980s. CVRD failed to persuade FUNAI to demarcate the Amerindian territories and argued that it could not be responsible for not discharging government responsibilities. Thus, the Amerindian development program and the land demarcation, important conditions of assistance to CVRD, were never realized, although the project was fully disbursed.

4.43 Appraisal documents for Russia's Oil Rehabilitation I and II projects detail the damage caused by previous oil refining, and point to Presidential decree N397, which emphasizes the protection of the rights and interests of national minorities of the North, and states that social scientists would work closely with the tribal populations to best determine how these people could equitably share the benefits from oil development. The environmental protection component of the second project includes a design program to best "safeguard the interests of national minorities, in or near project areas," although these projects do not have separate Indigenous Peoples' Development Plans (IPDPs).

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47. Capitania de Alto y Bajo Izozog (CABI) is an NGO for the indigenous Izozog community.

4.44 The follow-up by both the borrower and the Bank under Russia's Oil Rehabilitation I and II projects is unsatisfactory. As stated in the ICR, there was little commitment on part of the Oil Producing Associations (OPA) to the environmental action plans outlined in the environmental assessments. The only benefit that accrued to the indigenous peoples is that the replaced pipelines — only 69 out of 255 kilometers planned were implemented — will help reduce further oil leakages, but the implementation completion report notes that there is still a high rate of oil leaks and environmental damage far in excess of internationally accepted standards.

4.45 One active project, India's Coal Sector Environmental and Social Mitigation project, involves resettlement of tribal communities and includes Indigenous Peoples Development Plans for 25 mines slated to receive financial assistance under the project. This project is currently under an Inspection Panel investigation (see para. 4.21).

### ***Assessment***

4.46 Just as for involuntary resettlement, instances involving indigenous peoples' issues involved only a few projects. The Brazil Gas Sector Development project — the only completed project for which the Bank's Indigenous Peoples' Policy was implemented — appears to have achieved adequate results in resolving the issues through providing for finance and giving a participative and consultative role for the affected communities. The large size and complexity of the Russia projects appear to have relegated the indigenous peoples issue to low priority. This is a clear example of the inadequacy of mechanisms to ensure consistency with safeguards policies.

### **CAPACITY-BUILDING AND REFORM FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT**

4.47 There were several efforts of varying magnitude for capacity building, institutional development, and policy reform for environmental management in 16 completed and 9 active projects out of the portfolio of 48 completed projects. Most of the activities were completed satisfactorily while not much headway was made in two cases. For many of these efforts, the impacts are not evident from the ICRs, perhaps because results may be realized only in the long term.

### ***Completed Projects***

4.48 Two positive experiences in improving capacity for environmental management in the oil and gas sector came from the Georgia Oil Institution Building TA and Azerbaijan Petroleum TA projects. In Georgia, training for analysis and dissemination of environmental information that helped to enforce environmental responsibility for the Samgori-Batumi pipeline, strengthen the Baku-Tbilisi-Ceyhan pipeline agreements, and support to the government in negotiating a \$2 billion gas transit pipeline project. In Azerbaijan, at least one foreign investor launched a remediation project in a polluted field on the basis of the environmental component of a study financed under the project. In the mining sector, institutional and administrative capacity to enforce environmental regulations and law was improved through India's Coal Sector Rehabilitation project. On the other hand, there was little progress on a proposed Environmental Monitoring System (Ethiopia's Calub Gas project) due

to inadequate cooperation between the concerned government departments and the Calub Gas Company.

4.49 In the area of safety standards and environmental protection there was significant upgrading of capacity (Bangladesh's Gas Infrastructure, Thailand's Clean Fuels and Environmental Improvement, and Bolivia's Regulatory Reform and Capitalization Assistance project), including the formation of a specific cell for the purpose in the Ministry of Mining and Energy (Equatorial Guinea's Petroleum TA project II). Under the Papua New Guinea's Petroleum Exploration and Development TA project, standards for efficient storage and transportation of petroleum fuels were compiled and handed over to the National Institute of Standards and Industrial Technology though related environmental legislation is still considered inadequate.

4.50 With respect to environmental monitoring capacity, an Air Quality Monitoring Program was put in place along with a management information system, for areas where mining activities predominate (Peru's Energy/Mining TA) while preparing environmental action plans that were subject to government review was made mandatory in for coalmining companies (Poland's Hard Coal SECALs I and II).

### *Active Projects*

4.51 Projects in three countries — Burkina Faso, Madagascar, and Mauritania — aim to improve capacity for environmental management in their mining sectors. Burkina Faso's Mining Capacity Building project seeks to establish capacity for environmental management. The Madagascar Mining Sector Reform project will establish capacity in the country by means of pilot projects to identify and address environmental as well as social impacts from mining. The Mauritania Mining Sector Capacity Project has an Environmental Management System to include capacity building at the Ministry of Mining and Industry, for monitoring and enforcement of environmental regulations.

4.52 In the oil and gas sector, the Oil Spill Contingency project for the Indian Ocean Islands of Comoros, Madagascar, Mauritius, and Seychelles seeks to protect the environmental integrity of the coastal and marine ecosystems by helping the countries ratify and comply with international conventions and protocols that require states to develop and maintain adequate capacity to respond to oil spill emergencies. Kazakhstan's Uzen Oil Field Rehabilitation project will contribute to the remediation of past environmental damage to the field and strengthening the capacity of the state firm Uzenmunaigas's for environmental monitoring and management. Chad's Engineering project seeks to ensure that environmental issues concerning the main Chad-Cameroon Pipeline project are addressed and resolved before the follow-up project involving a hydrocarbon-based power gets underway.

4.53 In Mozambique's Mineral Resources Project, the environmental management system will set up a preventive environmental protection for mining. In India's Coal Sector Environmental and Social Mitigation project, the government will be assisted in making coal production more environmentally friendly and socially sustainable, including an investment component that will be used for implementing Environmental Action Plans, Rehabilitation Action Plans, and Indigenous Peoples' Development Plans for the 25 mines slated to receive financial assistance under the project.

4.54 In both the oil and gas and mining sectors, new environmental laws and guidelines were created (Bolivia's Regulatory Reform and Capitalization Assistance and Hydrocarbon Sector Reform and Capitalization projects) and additionally, regulations were established for rehabilitation of mining areas after decommissioning (Zambia's Second Economic and Social Adjustment project). However, a Gas Law for reform in the gas sector did not make much progress (Bangladesh's Gas Infrastructure project).

### *Assessment*

4.55 Capacity building for environmental management represents a valuable contribution by the Bank to client countries at a relatively low cost. While it is early to judge the impacts of these project components in many cases, broad indications are that most of the changes are sustainable, particularly in countries that already had a reasonable level of institutions and human resources in these areas. The Bank's cross-country experience also helped client countries to learn from other countries facing similar environmental situations. The number of efforts to build capacity for environmental management in extractive industries projects appears to be increasing.

## **CONCLUSIONS AND IMPLICATIONS FOR FURTHER WORK**

4.56 The most remarkable finding of the review of ICRs of completed projects and PSRs of ongoing projects is that there was only a single reported violation of safeguard policies. Of course, the coverage and quality of the reporting system leaves much to be desired, which is a major issue in itself. Overall, since this finding is at variance with the heavy criticism to which the Bank and the industry have been subject, we have now begun a detailed check of the consistency of the projects with the Bank's safeguard policy requirements at every stage of the project cycle, from preparation and appraisal to supervision and completion. The expected result of the consistency review is an assessment of the reliability of the Bank's safeguards monitoring and consistency assurance processes. This should yield useful findings and recommendations on how the Bank can further strengthen the implementation of safeguards.

## **5. From Resource Revenues to Sustainable Development**

5.1 From a country development perspective, the most important component of the economic benefits from extractive industries is usually the flow of fiscal revenues that can be used for growth-promoting public expenditures.<sup>48</sup> Thus, this chapter assesses the Bank's efforts to integrate the incremental revenues from resource extraction into the countries' overall development strategy through improved fiscal management and expenditure

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48. Other potential economic benefits include financial flows accruing to private investors, employees, local communities, etc., which represent compensation for risk capital, labor, and social and environmental services.

policies.<sup>49</sup> While the potential for major fiscal revenues is generally greater from the petroleum than the mining sector, it is useful to discuss them together in light of their shared characteristics of volatility and exhaustibility.

## LINKING EI SECTOR DEVELOPMENT TO OVERALL COUNTRY ASSISTANCE

5.2 The management of EI revenues cannot be isolated from the larger context of economic management. In a resource-rich country, EI revenues deserve special attention because of their importance to the economy, and their concentration in a few sources, which affords greater scope for rent-seeking. Hence, an assistance strategy for a resource-abundant country must not only recognize the specific issues involved in managing EI revenues but also chart their linkages with the broader management of the country's development.

5.3 A review of the World Bank's most recent Country Assistance Strategies (CASs)<sup>50</sup> found that a majority (64 percent) of those for poorly performing EI-dependent countries recognized one or more issues related to the management of EI revenues (see Figure 5.1).<sup>51</sup> The issues that were mentioned spanned a wide range, including the management of volatility and exhaustibility of EI revenues (Azerbaijan, Mongolia), achieving macroeconomic stability (Gabon, Trinidad and Tobago), public expenditure policies for EI revenues (Bolivia, Chad), transparency in handling EI revenues (Kazakhstan, Papua New Guinea), diversification of economic activity (Nigeria, Zambia), and reduction of subsidies to the EI sectors (Russia).

5.4 In general, the mention of EI revenue issues in a CAS does not appear to translate readily into developmental interventions by the Bank. The dearth of follow-up interventions could be related to the relatively low level of Bank involvement in poorly performing EI-dependent countries. World Bank lending per capita over 1990–99, was significantly lower (at US\$47) for poorly performing EI-dependent countries, than for better performing EI-dependent countries (US\$80) or poorly performing non-EI-dependent countries (US\$61) (see Figure 5.2). While this is a consequence of the Bank's country policy and institutional performance based allocation of IDA credits, there is no indication that the shortfall in lending has been mitigated by non-lending interventions such as economic and sector work, as would seem desirable in light of these countries' needs<sup>52</sup> (see Box 5.1).

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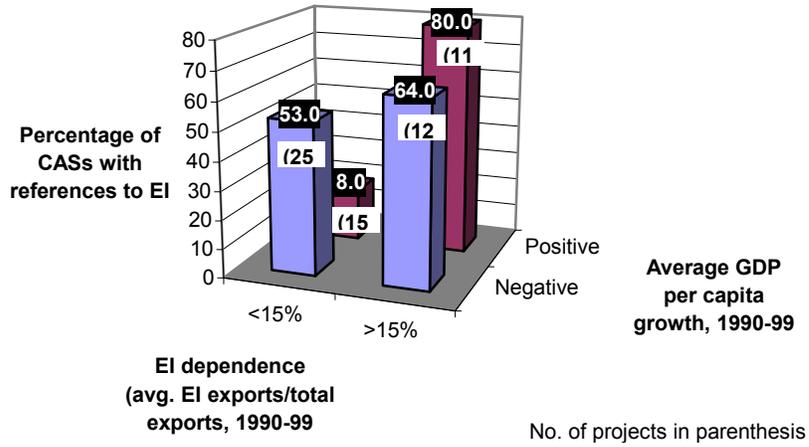
49. Beyond the allocation of fiscal revenues in line with national development priorities, an assessment of the efficacy of public expenditures for achieving sustainable development and poverty reduction was outside the scope of this evaluation. Such assessments are regularly included in OED's Country Assistance Evaluations.

50. As stated in BP 2.11, "The Country Assistance Strategy (CAS) is the central vehicle for Board review of the World Bank Group's assistance strategy for IDA and IBRD borrowers. The CAS document (a) describes the World Bank Group's strategy based on an assessment of priorities in the country, and (b) indicates the level and composition of assistance to be provided based on the strategy and the country's portfolio performance."

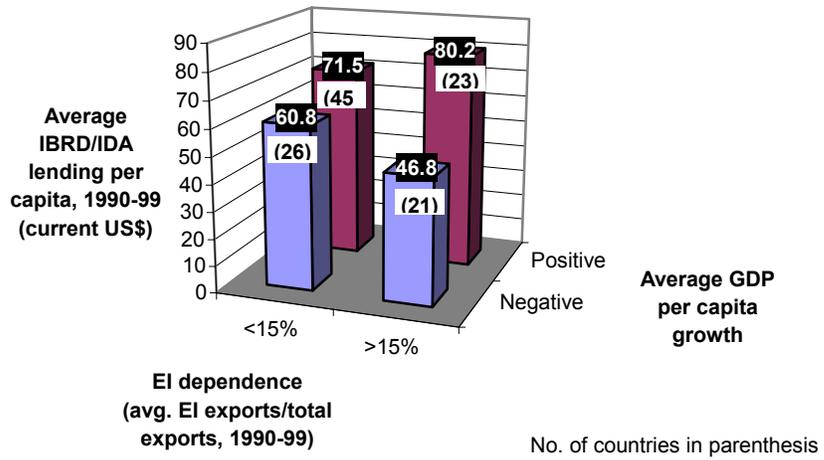
51. The percentage was higher for better performing EI-dependent countries at 80 percent, and lower for non-EI dependent countries.

52. Many of these fit the description of low-income countries under stress (LICUS). As stated in the LICUS Task Force Report (World Bank, 2002): "Low-income countries under stress are characterized by very weak policies, institutions, and governance. Aid does not work well in these environments... Yet neglect of such countries (by the development community) perpetuates poverty and may contribute to the collapse of the state, with adverse regional and even global consequences."

**Figure 5.1: Percentage of Countries Whose CAS Refers to EI Issues**



**Figure 5.2: IBRD/IDA Lending per Capita (no. of countries)**



### Box 5.1: Analytical and Advisory Activities in the EI Sectors

The Bank has engaged in a variety of analytical and advisory activities (AAA) in the EI sectors, including economic and sector work (ESW) as well as sponsoring meetings, conferences, and workshops for stakeholders.

None of the AAA in the EI sectors has been evaluated through either self-evaluative Activity Completion Summaries (ACS)<sup>a</sup> or the annual reviews of ESW by the Quality Assurance Group (QAG) from 1998 to 2001. However, some reporting in the ICRs, as well as in country case studies prepared for this evaluation, gives an idea of the integration of representative AAA with project preparation.<sup>b</sup>

In Papua New Guinea, the Bank has provided a range of ESW on many occasions since the 1980s in the mining sector and it undertook reviews of environmental issues in 1992 and again in 2000 that provided input into the mining TA project. The Argentina Mining Sector Review (1993) helped improve the quality of project preparation for the country's Mining TA and Mining Sector Development TA projects. In Ecuador, the Bank assisted the government in the preparation of a Mining Sector Policy and Strategy Paper in 1990 (updated in 1993) stressing the need for legal and institutional reform to attract private sector investment in the sector, and to address environmental impacts of artisanal and small-scale mining.

Other illustrative publications from the oil & gas sector on institutional development and policy issues include "Legislative Frameworks Used to Foster Petroleum Development" (1995), "Management of Oil Windfalls in Mexico: Historical Experience and Policy Options for the Future" (2001), and "Does Mother Nature Corrupt? — Natural Resources, Corruption and Economic Growth" (1999).

In the mining sector, several country-level sectoral reviews have been prepared, among them the *Kyrgyz Republic: Mining Sector Review* (World Bank 1994a), *Russian Federation: Restructuring the Coal Industry: Putting the People First* (World Bank 1994b), *Kazakhstan: National Gas Investment Strategy Study* (ESMAP 1997), and *Ecuador — Public Sector Reforms for Growth in the Era of Declining Oil Output* (1991). "A Mining Strategy for Latin America and the Caribbean" (Van de Veen et al. 1996) and "Strategy for African Mining" (World Bank 1992) spell out strategies for boosting private investment in the regions.

a. At least since 1998, the Bank has required Activity Completion Summaries to be prepared of all ESW with a budget of \$50,000 or above, within six months after "delivery to client." In AFR, there is no threshold, and in ECA it is \$15,000.

b. A detailed list of ESW by the Bank in both oil & gas and mining sectors is included in the Bibliography annexed to the Portfolio Review.

Source: Country Case Studies, World Bank

5.5 For a more in-depth assessment of the Bank's involvement in the revenue management issues of EI-dependent countries, the Revenue Study reviewed CASs, Country Assistance Evaluations (CAEs), project documents for EI and other sectors, and adjustment lending and Public Expenditure Reviews and other documents for five EI-dependent countries: Bolivia, Ecuador, Ghana, Kazakhstan, and Papua New Guinea.<sup>53</sup>

5.6 The study found that in all five countries, governance was the key to successful management of EI revenues and fed into the quality of revenue distribution and utilization, as well as attempts at economic stabilization and diversification. Ecuador and Ghana lacked the political will and the fiscal discipline necessary to maintain macroeconomic stability, putting

53. The five countries were chosen based on the relative importance of extractive industries in their economies, the intensity of Bank assistance they received, and for regional diversity.

other reforms in jeopardy. Kazakhstan and Papua New Guinea showed little institutional development or commitment to governing openly or fairly. Only in Bolivia did the government show a commitment to managing its revenues within the context of overall public finance management, but even this country is having difficulty maintaining fiscal discipline. The Revenue Study also found that desirable structural reforms were slowed down in the face of large resource flows (see Box 5.2).

**Box 5.2: EI Revenue Management and Macroeconomic Performance: Some World Bank Country Experiences**

The World Bank has assisted several EI-dependent countries in reconciling EI revenue management with broader macroeconomic management. In most cases the outcomes have been less than satisfactory.

In Ecuador, in the 1990s, the Bank identified constraints to macroeconomic performance as the major negative effect of the decline in oil revenues and their mismanagement, but it failed to develop a more comprehensive strategy to isolate the economy from volatility and exhaustibility of the resources and for sharing oil benefits. Though the Bank provided financial assistance to sectoral rehabilitation and macroeconomic stabilization, the expected reforms were not implemented and export and fiscal revenues went to finance highly inefficient public expenditures. Overall, the Bank had a very limited influence on how oil revenues were managed to promote macroeconomic stability and social equity.

In Ghana, during the 1990s, the Bank supported efforts for better financial management and civil service reform, but OED's Country Assistance Evaluation (CAE) of 2000 found these efforts were only partly successful. Many shortcomings remain in the overall quality of Ghana's public governance, as illustrated by politically motivated spending on public sector wage increases and consumer subsidies before each election in 1992, 1996, and 2000. These led to persistent macroeconomic instability with negative consequences for investment and growth.

In Kazakhstan, an inflow of petroleum revenues created prosperity that began to produce symptoms of the "Dutch disease" and reduced commitment to overall reform, to the point that the country has forgone sound advice from the World Bank in respect of management of EI revenues.

In Papua New Guinea, private investment in the EI sectors created some prosperity in the early 1990s, after which the government discontinued reforms, which precipitated a financial crisis. Following this, the WBG supported a new government effort to restore macroeconomic stability and initiate structural reform, with emphasis on governance and economic diversification. But macroeconomic mismanagement continued, compounded by political uncertainty and poor transparency and accountability, forcing the Bank to suspend the second tranche of a structural adjustment loan.

In Bolivia, WBG strategy in both hydrocarbons and minerals had great success in generating revenues, helped in great measure by the country's own "capitalization" program. However, public expenditure management in the country is still weak, and it has not responded well to several WBG technical assistance and structural adjustment operations targeted at public finance management, civil service reform, customs administration, and judicial reform.

Sources: Revenue Study, Country Case Studies.

**Economic Benefits from Capacity Building and Policy Reform**

5.7 Six of the completed TALs that helped to improve the capacity of the client countries to negotiate with private investors and four others helped upgrade accounting procedures to international standards. Three projects in Papua New Guinea (Petroleum Exploration TA), Georgia (Oil Institution Building TA), and Peru (Peru's Energy/Mining TA) helped build

better capacity for negotiating with private investors for exploration and development through improved data collection and economic analysis. Similar capacity was developed in Russia for working with foreign suppliers and organizing bidding (Oil Sector Rehabilitation I and II projects) and in Equatorial Guinea for maintaining a dialogue on long-term development plans with oil companies (Petroleum TA project).

5.8 Four completed projects supported the adoption of international accounting practices by state enterprises for improving transparency and compatibility with foreign investors: Azerbaijan's Petroleum TA with respect to the State Oil Company of Azerbaijan; the Mongolia Economic Transition Support project for the planning and restructuring of operations of the ERDENET copper mine, and Thailand's Gas Transmission I and II projects with respect to the Petroleum Authority of Thailand. The results are reported to have been satisfactory. (See paras. 6.54 to 6.60)

### *Assessment*

5.9 Efforts at improving capacity for negotiating with private investors and for adopting international accounting practices have yielded generally favorable results. This was mainly because the client governments and implementing agencies recognized the immediate benefits in terms of attracting higher private investment and gaining more favorable contractual terms. The lesson is that where such conditions are given, these seem to be straightforward and effective project initiatives.

## **FISCAL REVENUE MANAGEMENT**

### **Improving Revenue Generation**

5.10 Of the 48 completed projects, six involved components designed to help resource-dependent countries improve the government's share of the revenues generated by extractive industries. The capacity of officials to conduct negotiations with international private investors was significantly improved as a result of three TA projects for Azerbaijan, Georgia, and Kazakhstan. Three other initiatives were not as successful. Russia's Oil Sector Rehabilitation I and II projects provided assistance to help the government prepare regulations for the transparent allocation of petroleum production quotas and access to export pipelines. However a draft law for this purpose resulted in a less than satisfactory result for oil producers and was not approved by the legislature. The Equatorial Guinea Petroleum TA II project addressed an imbalance in the sharing of revenues between a foreign company and the government with respect to the Alba field, but much headway could not be made on this issue due to poor coordination with the government. An amendment to the Hydrocarbon Law helped increase the royalties and to restrict recoverable exploration and production costs, but these provisions continued to be more generous than those in neighboring countries (see Box 5.3).

### **Box 5.3 Improving Revenue Generation From Petroleum Development — The Bank’s Experience in Equatorial Guinea**

The Bank’s involvement with petroleum exploration and development in Equatorial Guinea dates back to 1981, when consultants under Bank-administered, UNDP-funded TA assisted the government in drafting the Hydrocarbon Law. It included terms very favorable to Petroleum Sharing Contractors, particularly regarding income tax rates (25 percent), but also royalties (10 percent), and allowed cost recovery (100 percent, with no limit). Furthermore, the government share of “profit oil” (net cash flow, that is, oil revenues net of operating costs, allowed recovery of investment costs, and royalties) was based on a realized rate of return formula that guaranteed the contractor a minimum rate of return of 30 percent before the government would be entitled to a share of profit oil.

The first two contracts, which were signed with Walter International and Exxon Mobil in 1992, used the 1981 model PSC. However, it rapidly became clear that the terms were excessively favorable to contractors and their administration was too complex for the government’s limited capacity. The Bank then encouraged the government to revise the law and again renegotiate the contracts and financed consultants for that purpose under the Second TA Project. The consultants proposed a simplification of the oil sharing formula, with the government share of profit oil to be based on annual profit rather than rates of return. But the government was not convinced and decided to submit the proposal for further review by other specialists and oil companies. In the end, after project closing, the government adopted a simpler oil sharing formula where the government share of net cash flow (profit oil) would be based on cumulative production. It also introduced cost ceilings and raised royalties. The Mobil PSC was renegotiated accordingly. A Bank Economic Strategy Note in 1998, concurred with these changes and recommended that the model PSC and the Hydrocarbon Law be revised accordingly, which was done in November 1998. The contract with Walters was also renegotiated and all new PSCs now have more demanding conditions.

There is still a widely held perception that the new terms are quite generous to investors (though less so than before). The Economic Strategy Note estimates the total government take to fall between 15 and 40 percent (depending on field life), compared with 45 to 90 percent in other Sub-Sahara African countries. For offshore Nigeria, an appropriate comparator given proximity and water depth, the total government take was estimated at 64 to 67 percent.

*Source:* OED: Equatorial Guinea Country Case Study

### ***Assessment***

5.11 Only six out of 48 completed projects attempted to assist client countries improve their share of revenues vis-à-vis producers and investors. While some capacity building took place, the impact in terms of fiscal revenues is not clear. Even so, the Bank’s assistance for analyzing and understanding the implications of conflicting demands and providing information on international best practice can be expected to have strengthened the governments’ hand in obtaining the results that they wanted.

### **Managing Volatility and Exhaustibility of Revenues**

5.12 None of the projects in this review included a provision for managing the volatility and exhaustibility of fiscal revenues from resource extraction. On the other hand, a review of recent Country Assistance Strategies (CASs) for 17 resource-abundant countries shows that for 12 of these countries<sup>54</sup> the Bank explicitly recognized that the volatility and exhaustibility

54. Azerbaijan, Cameroon, Chad, Colombia, Chile, Gabon, Kazakhstan, Mongolia, Nigeria, Papua New Guinea, Trinidad and Tobago, and Zambia

of fiscal revenues from the extractive industries represent major challenges. Broad approaches to deal with these issues have been identified, such as policy advice for a windfall fund, proposed projects for privatization, and encouragement of non-oil sector growth (Gabon); identifying options for use and management of oil wealth such as offshore funds (Kazakhstan); longer-term strategy of fiscal management of copper revenues, taking resource depletion into account, considering hedging operations, and diversifying exports (Mongolia); creating a strong private sector in non-oil industries (Azerbaijan); using an oil stabilization fund to attain long-term benefits (Colombia); reestablishing macroeconomic stability and implementing measures to reduce vulnerability to external shocks (Papua New Guinea); and keeping a sizeable reserve cushion (Chile). However, except for Chad and Kazakhstan, the CAS review does not show major lending or non-lending initiatives following directly from the discussion of these issues.

#### **Box 5.4: How Effective Are Resource Funds?**

A number of EI-dependent countries have responded to the prospect of volatility and exhaustibility of EI revenues by setting up petroleum, resource, or future generations funds, with the objectives of maintaining fiscal discipline, overall macroeconomic stabilization, or saving for future generations. These attempts have been mostly unsatisfactory.

Papua New Guinea's Mineral Resource Stabilization Fund (MRSF) of the 1970s was depleted by withdrawals and excessive public spending, and was finally used up in 1999 to retire debt that had then reached 25 percent of GDP. Ghana's Mineral Fund is currently a source of controversy because its recipients, both mining communities and the Ministry of Finance, have mishandled its system of resource-rent sharing. Kazakhstan's National Oil Stabilization Fund, created in 2001 with the intention of reducing the negative impact of oil revenues on the domestic economy and providing for the welfare of future generations, has yet to evolve rules for transfer of funds and establish spending priorities, and has already been criticized for misuse of funds. The Petroleum Stabilization Fund established by Ecuador in 1990 turned into an additional source of revenues to finance regular budgetary expenditures. In Equatorial Guinea, the government has established a Future Generations Fund in its overall scheme for the utilization of anticipated petroleum revenues, but no significant amounts have been deposited.

In general, the same elements of disciplined economic management are needed to make a success of a resource fund as are needed to run an economy effectively. Thus, recourse to resource funds is unlikely to yield better results than pursuing equitable distribution and effective utilization of EI revenues through sound fiscal policies.

*Source:* Davis et al. 2001; World Bank; Country Case Studies.

### ***Assessment***

5.13 The approaches being proposed in the CASs to deal with issues of volatility and exhaustibility of revenues from the extractive industries are in line with the recommendations in the literature. Of these approaches, substantial research interest has focused on the efficacy of specific (petroleum or mineral) resource funds as an instrument for volatility and depletion management. Recent analytical work done by International Monetary Fund (Davis et al. 2001) suggests that the experience with such funds has been mixed in the past, with the few important successes coming from countries with a strong history of fiscal prudence (Chile, Botswana, Malaysia). For countries without such a tradition, the integration of such funds

with overall fiscal policy has proved problematic, and the stabilization of expenditure has remained elusive.

### **Revenue Utilization**

5.14 Countries with significant revenues from extractive resources face the challenge of using these funds effectively for sustainable development. The review of CASs for resource-abundant countries shows that the issue of improving public expenditure policies in the context of extractive industries revenues was discussed to a significant extent for six countries.<sup>55</sup> The approaches discussed in the CASs for improving the efficiency of utilization of revenues from the extractive industries include: improving capacity for public finance management and developing a strategy for poverty-oriented use of revenues (Chad), resisting the unwise expenditure of oil revenues (Azerbaijan), effective management of resource rents (Mongolia), and directing revenues toward sustainable use (Kazakhstan). Once again, there is little evidence in the CASs of lending or non-lending activities that follow directly from these discussions.

5.15 Only three active projects relating to the Chad-Cameroon Pipeline — Chad’s Management of the Petroleum Economy project and Petroleum Development and Pipeline project, and Cameroon’s Chad-Cameroon Pipeline project and — contain explicit provisions for allocating fiscal revenues from extractive industries. The projects include provisions for earmarking a share of the revenue for alleviating poverty, improving rural development and infrastructure, financing primary expenditures, and supporting macroeconomic stability. Specifically, Chad’s Petroleum Economy project and Petroleum Development project specifically aims to help Chad build the capacity to implement its petroleum revenue management strategy to enable it to effectively absorb and allocate expected oil revenue, and thus pursue the poverty-reduction objective of petroleum resources development. For this purpose, the project has five components covering public financial management, developing a poverty database, building human resources, ensuring oversight and control of and monitoring economic reform and coordinating capacity-building.

### ***Assessment***

5.16 With the above exceptions, the projects in the reviewed portfolio do not make provisions for the use of revenues from extractive industries for sustainable development. This could be because such linkages are more appropriately addressed at the macroeconomic level, rather than through sectoral initiatives, but this needs to be investigated further as proposed in the concluding sections of this chapter.

### **Revenue Distribution**

5.17 An *equitable distribution of revenues* is that which is consistent with national developmental priorities, subject to (i) entitlements of legal, customary, and traditional owners of resource rights, and sub-national units of the government, as recognized under

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55. Albania, Bolivia, Chad, Gabon, Kazakhstan, and Mongolia

national laws, and (ii) compensation for negative environmental and social impacts. An additional negotiated premium to local communities and governments may also be appropriate, depending on national priorities.

5.18 Only six projects in three countries — Bolivia, Papua New Guinea, and Russia — out of the portfolio of 48 completed projects contained provisions for distribution of revenues from resource extraction to meet entitlements, compensation, and other national priorities. Of the six projects, four had satisfactory outcomes overall. No similar provisions were found in ongoing projects.

5.19 Bolivia (with support from the Hydrocarbon Sector Reform and Capitalization; Regulatory Reform and Capitalization I and II projects) implemented a remarkable program to transfer the future benefits stream from the development of the extractive industries (among other sectors) from the government to its citizens. The government decided to share the proceeds of US\$827 million from privatization of hydrocarbon and mining enterprises with senior citizens in the form of an annuity — involving a payment of about \$250 per year to 300,000 Bolivians in 1998, a number that was expected to rise by 10,000 each subsequent year. The government later changed this approach to providing benefits in the form of ownership of shares in mutual funds for a larger cross-section of the population. While there was no windfall for the government and the new policy permitted adult Bolivian shareholders to benefit from the future profits of the privatized enterprises, it is too early to assess the long-term impact of the scheme.

5.20 In Papua New Guinea, a complex array of revenue sharing provisions of different vintages was rationalized through the Oil and Gas Act of 1998, which imposed a cap of 20 percent on the benefits granted to landowners out of the net benefits to the state (see Box 5.5). On the other hand, Russia's Oil Rehabilitation I and II projects made little headway on implementing an element of sector reform to that involved the transparent allocation of petroleum revenue shares toward royalty payments, taxes, and funds earmarked for the environment, science, and geology.<sup>56</sup>

### *Assessment*

5.21 The portfolio of reviewed projects does not appear to give high priority to issues of equitable distribution of revenues from extractive industries activities. These issues are invariably politically sensitive and are also part of larger revenue sharing arrangements between different levels of government. The process of building a consensus on revenue-sharing is thus likely to be contentious because of the various stakeholders that are involved — local communities, governments at the local, regional, and central levels, and investors — and protracted due to the administrative and legislative changes that may be needed. While it is to be examined whether the Bank is addressing these issues through projects at the

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56. In Russia's Oil Rehabilitation I and II projects, elements of sector reform were planned under which the percentage shares going towards royalty, government, and funds earmarked for environment, science and geology were specified. These did not materialize due to (i) uncertainty and tension over division of petroleum receipts between regional and central authorities; (ii) specific requirements of international oil industry not being reflected in Russian Law; and (iii) the dual taxation issue not being addressed.

economy-wide level, it is clear that much more needs to be done in tackling issues of distribution of revenue specifically relating to extractive industries — especially in resource-abundant countries — even if initially at the level of raising awareness and bringing together all stakeholders.

**Box 5.5 Sharing Revenues from Extractive Industries Revenues with Local Communities: The Bank’s Experience with Papua New Guinea**

Papua New Guinea’s Petroleum Exploration TA project built on earlier efforts to help the Government of Papua New Guinea (GOPNG) develop institutional arrangements for sharing benefits from extractive industries with local communities. Specifically, the project assisted the Department of Petroleum and Energy in formulating and drafting the 1998 Oil and Gas Act. This comprehensive document superseded the incomplete legal instruments and ad hoc Cabinet-approved arrangements previously governing the sector. It broke new ground in (i) formalizing the principles for revenue sharing among the different branches of government and landowners, (ii) setting out the process of consultations with stakeholders on new projects, and (iii) identifying landowner beneficiaries by means of obligatory ex-ante social mapping and landowner identification studies. The act also formally reserves an equity and royalty benefit for project area landowners, as well as for local and provincial governments, but caps it at 20 percent of the total net benefit to the State from petroleum projects. This was to safeguard the interests of the rest of the PNG population and of future generations. The Oil and Gas Act is generally viewed as a good basis for future sector development, despite the need for greater precision on a number of issues relating to landowner benefits and their administration.

However, it can be argued that the present distribution of resource rents in PNG has gone too far in favor of present landowners and insufficient provision is made for future generations in project areas as well as other parts of the country. It also favors landowners disproportionately over all project-affected persons, but in the present political environment, GOPNG could not switch to a system in which benefits were tied to impacts rather than landownership.

Source: Papua New Guinea Country Case Study.

## CONCLUSIONS

5.22 At the country level, the majority of CASs in EI-dependent countries recognized one or more issues related to the management of fiscal revenues from resource extraction, but there are only a few instances where the discussion is linked to specific interventions to address them. Also, the Bank’s overall lending to EI-dependent countries experiencing negative growth has been substantially lower than average, with no indications of compensating non-lending interventions, and no evaluative evidence on the results of such interventions.

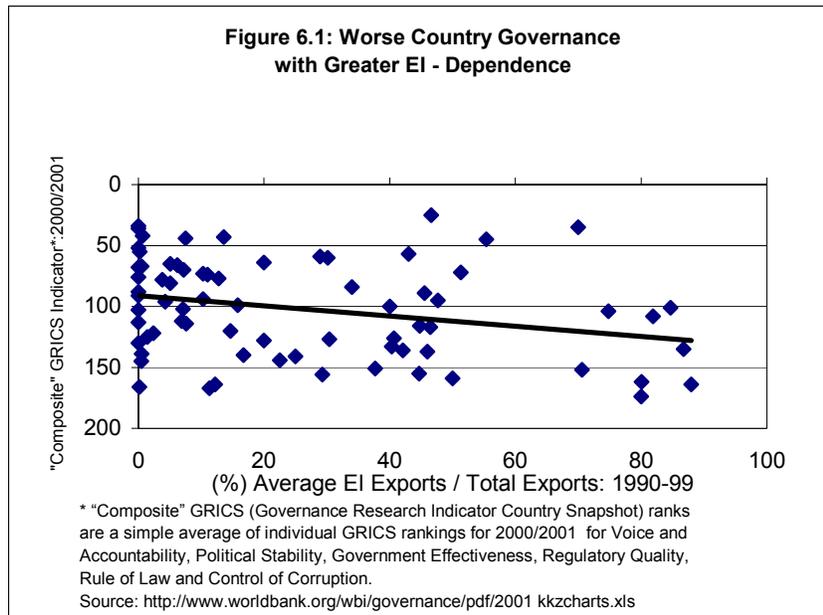
5.23 These findings suggest that, while the Bank has been reasonably effective in the few cases when it addressed revenue generation and distribution issues at the project level, it has yet to formulate and implement viable approaches to consistently transform resource rents into sustainable development, particularly in the most poorly performing EI-dependent countries where the need is greatest. The strategic approach needs to ensure that project-specific interventions are effectively integrated with a macro-level effort to manage the revenues for sustainable development. Projects and analytical and advisory activities to

strengthen policies and institutions to ensure that the management and utilization of EI revenues is efficient and transparent should play a major role. Projects to close uneconomic mines and mitigate pre-existing environmental and social conditions, including the integration of artisanal and small-scale mining within the formal sector, will also be important where such problems exist. Projects to establish a legal and regulatory framework that is appropriate, stable, and consistently enforced, and that will facilitate the privatization of ongoing activities should also be expected to make a major contribution.

## 6. From Rent-Seeking to Good Governance

### INTRODUCTION

6.1 A high dependence on revenues from extractive industries has often been associated with corrosive effects on economic and political life in many countries, including rent-seeking and government ineffectiveness (see Figure 6.1). Indeed, the review of the literature and feedback from NGOs suggest that good governance is central to creating an environment that fosters sustainable and equitable development, and is an essential complement to sound revenue management and safeguard policies.



6.2 Governance, defined as the manner in which power is exercised in the management of a country's economic and social resources for development, has been an explicit concern for the Bank at least since 1990, when the Bank's General Counsel articulated the legal basis for its work in this area. This was followed by a Board Paper on "Governance and Development" that outlined the Bank's general approach to improving governance. Before this time, the Bank had undertaken many initiatives that addressed institutional and policy aspects related to governance, including projects to reform public sector policies and institutions, and create an enabling environment for private sector development. Following the early 1990s, great effort

has been devoted to strengthening complementary process-oriented aspects, including public participation, information disclosure, promoting transparency, and reducing corruption.

6.3 While the Bank has long been aware of the importance of addressing the governance challenge for enhancing the transformation of resource rents into sustainable development, it does not have an explicit strategy for doing so. This is understandable, given the absence of a widely accepted conceptual model of how resource rents interact with governance, and the breadth and complexity of the issues that would have to be considered, ranging from country-level fiscal policy and budgetary allocation processes, to sector-level issues associated with regulatory agencies and state enterprises, and very local processes affecting the implementation of specific investment projects. For the same reason, it may be premature for this study to try to evaluate the adequacy on the Bank's efforts in this area.

6.4 On the other hand, since good governance is central to achieving sustainable development out of resource extraction, it is important to identify and evaluate the results of the efforts that have been undertaken in conjunction with the Bank's extractive industries activities. This should be a useful first step toward defining what further steps the Bank should consider to address the governance challenge as it seeks to formulate its future role in the sector.

6.5 This chapter reviews the project components that fall within the scope of the Bank's general approach to strengthening governance. It covers: (i) institutional and policy framework and related capacity-building for various components including regulatory reform, clarification of property rights, and improved accounting and auditing standards and practices; and (ii) components to strengthen governance processes, including public consultation and participation, information disclosure and dissemination, promoting transparency and reducing corruption.

## **INSTITUTIONAL AND POLICY FRAMEWORK**

### **Policy and Regulatory Reform — Private Sector Development**

6.6 Ten completed projects and two active projects attempted policy and regulatory reforms aimed at improving efficiency by increasing the role of the private sector or diluting the role of state-owned enterprises, or by enhancing the government's ability to deal with the private sector. Efforts at privatization ranged from commercialization of state-owned enterprises to full-scale privatization, and showed mixed results, with moderately satisfactory or better outcomes in nine projects, and less satisfactory results in three projects.

#### ***Completed Projects***

6.7 In the oil and gas sector, during the Bolivia Regulatory Reform and Capitalization Assistance projects, sweeping reforms were implemented to promote investment, privatization, and regulatory reforms as well as institutional development for CONARE

(national regulatory commission) with considerable success.<sup>57</sup> Similar provisions under Bolivia's Hydrocarbon Sector Reform and Capitalization project supported specific reforms to strengthen Bolivia's regulatory and judicial institutions and establish administrative mechanisms for fair and swift adjudication of commercial disputes.

6.8 The Colombia Energy TA assisted the country in developing a new industry structure and regulation for the natural gas market incorporating private sector participation and competition, and helped attract private companies to the sector to create and operate a gas pipeline infrastructure.<sup>58</sup> The Corporatization and Privatization Study under the Thailand Gas Transmission II project has prompted an expeditious follow-up and is expected to enhance PTT's competitiveness and strength. Under Equatorial Guinea's Petroleum TA II, an amendment to the Hydrocarbon Law was enacted, leading to improvements in the government position and simplification in contract supervision, though not to the same extent as in neighboring countries

6.9 In the mining sector, the Guinea Mining Sector Investment Project helped strengthen the government's capacity to act as a facilitator and regulator of mining activities and laid the groundwork for efficiently implementing new sectoral policies and procedures and helping attract private investment for the development of the sector.<sup>59</sup> A modern mining code was adopted under the project. However, harmonization of legislative texts from different codes was hampered by difficulties in inter-ministerial cooperation.

6.10 In respect of commercializing state-owned enterprises, 2 projects in the oil & gas sector in Zambia and Madagascar produced mixed outcomes, while there were 3 projects in the mining sector in Zambia, India, and Poland, with less than satisfactory experiences. Zambia's Petroleum Rehabilitation project met with little success in creating a consortium of private sector companies to break the existing government monopoly on oil marketing. The Madagascar Petroleum Sector Reform project made a beginning by preparing a strategy to privatize SOLIMA (the national petroleum company). In related actions, a new petroleum law was adopted and a regulatory agency was being set up at the time of project completion.

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57. Independent companies were established for negotiating issues related to exploration between the state-owned YPFB and international oil companies. A new Hydrocarbon Law was passed, staffing of regulatory and other agencies to supervise concessions and manage compliance and regulations was achieved.

58. As a consequence of the Colombia Energy TA project, a new network of gas pipelines owned by private regional distribution companies is now linking the principal gas fields of the Atlantic Coast with the main cities for the interior including Bogota, Medellin and Cali, and as of 2002, serving about 2.2 million gas users (up from 0.9 million in 1995). Gas industry regulations have been put in place and an independent Energy and Gas Regulatory Commission (CREG) is supporting the edifice of the structural reform of the energy sector. However, although US\$1.5 million was spent on carrying out 2 major studies, CREG did not succeed in putting in place a futures market as recommended by studies.

59. Under the Guinea Mining Sector Investment project, the government's capacity was strengthened through harmonization of laws, institutional strengthening of several essential services and abolishment of some non-essential services. New investment was attracted for two gold and two diamond mines, and there was significant increase in new exploration activities. These achievements exceeded the performance targets at appraisal. Also, the project helped identify major projects for iron ore and alumina in the future.

6.11 The privatization of Zambia Consolidated Copper Mines (ZCCM) was delayed due to a volatile market for copper as well as prolonged negotiations between all principal stakeholders. Under the India Coal Sector Rehabilitation project, the amendment of the Coal Mines Nationalization Act (CMNA) — required to enable private participation in the development of new non-captive mines — was submitted belatedly to parliament in April 2000, but no headway could be made due to intense opposition from trade unions. The important policy TA designed to provide the critical foundation for the coal sector reform did not take off due to limited government interest.<sup>60</sup> During Poland's Hard Coal SECAL II, initial steps to privatization of coalmines were taken in respect of the Bogdanka and the Budryk mines, though without significant progress. A Privatization Strategy Framework was completed and approved in 2002, but progress in implementing is slower than expected. Turkey's Privatization Implementation Assistance & Social Safety Net Project did not make much headway in its privatization program for state-owned enterprises including some mining enterprises, because of insufficient government commitment and objectives that proved too ambitious. Turkey's Privatization Implementation Assistance & Social Safety Net Project did not undertake any substantial social measures, since the privatization program for state-owned enterprises including some mining enterprises, failed to make much headway, because of insufficient government commitment and objectives that proved too ambitious.

### *Active Projects*

6.12 Among active projects, Madagascar's Mining Capacity Building project aims to establish an enabling environment to both promote private investment in mining and to ensure real and sustainable contribution to economic growth. Romania's Petroleum Sector Rehabilitation project seeks to establish a suitable regulatory framework to facilitate the development of an efficient and commercially oriented petroleum sector. Zambia's Economic recovery and Investment Promotion TA provides investment banking, legal and specialist advisory services to the government of Zambia to assist in the preparation and implementation of the Zambia Consolidated Copper Mines Ltd. (ZCCM) privatization plan. Another active project in Zambia — Zambia's Mine Township Services Project — is intended to facilitate the completion of the privatization of ZCCM by supporting the provisions of efficient and reliable water supply services, wastewater services and solid waste management in five mining townships during a transitional period following the privatization.

### *Assessment*

6.13 The experience from India's Coal Sector Rehabilitation project illustrates some key requirements for successful policy and regulatory reform for privatization, a complex and contentious undertaking at the best. With the benefit of hindsight, it is clear that the Bank

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60. The elements of sector reform that were crucial to the success of the project were not clearly defined in the SAR or articulated in a formal letter of development policy or in the legal agreement, undermining its chances of success. The lack of political continuity and stability at the central government level made it difficult for GOI to move ahead with sector reforms. With hindsight, the Bank underestimated the magnitude of political and social resistance to political reform.

underestimated the likely magnitude of political and trade union resistance to privatization of the coal sector, which employs a large number of workers. Because of this, the Bank apparently did not insist on important elements of legislation being in place before moving ahead with the project. The intentions of the government were positive, but political inability to stand up to trade union pressure derailed the proposed legislation. Conversely, Bolivia had the advantage of a strong political mandate for privatization, which quickly moved forward. Zambia's lack of progress was mainly due to unfavorable international prices for copper, which put the government in a weak position vis-à-vis other stakeholders. Most of the other cases reviewed were relatively less complex, which improved their chances of success. In Poland, lack of political consensus, and the lack of commercial viability of the coal mines seem to have slowed the process of their privatization

### **Policy and Regulatory Reform — Project-Financed Studies**

6.14 Important policy advice was given through project-financed studies that were carried out through six completed projects while another completed project had mixed results in its efforts at policy reform. As for the studies, they were generally found to be useful by the client countries and some of them resulted in specific follow-up action, whereas there was no evidence of follow-up for the others. There are also six active projects with significant elements of policy and regulatory reform.

#### ***Completed Projects***

6.15 In the oil and gas sector, several studies were carried out under Thailand's Gas Transmission I and II projects — of which one study on Corporatization and Privatization prompted an expeditious follow-up and is expected to enhance the competitiveness and strength of the Petroleum Authority of Thailand (PTT). The Bosnia-Herzegovina Emergency Gas Rehabilitation project financed several studies — on Gas Sector Restructuring, Tariff, and Billing and Collection — which are being used to implement reform and institutional development. In Papua New Guinea, the Liquefied Natural Gas Utilization Study helped establish the presence of reserve capacity to market gas to Asia and Australia. In Korea (Petroleum Distribution) an Energy Conservation Study was completed but its development impact was considered to be limited. A Petroleum Evaluation Report and the Large-Scale Gas Study were submitted to the government of Ethiopia, but did not result in any follow-up action, while a proposed study on petroleum pricing and market structure study did not take place.

6.16 In the mining sector, the Mongolia Coal Pricing Study sparked considerable dialogue. Under India's Coal Sector Rehabilitation project, pricing and distribution of all categories of coal were liberalized in January 2000. Coal is also freely imported under an open general license. The project eliminated the automatic cross-subsidization of loss-making activities through the Coal Price Regulation Account (CPRA). The Ghana Mining Sector Development and Environment TA was delayed in its attempts at policy reform due to lack of clarity of precise objectives and the means to achieve them.

### ***Active Projects***

6.17 In the oil and gas sector, Romania's Petroleum Sector Rehabilitation project will assist the government in achieving the objective of its petroleum strategy to promote private sector investments in the petroleum sector, strengthen institutional capabilities, and establish a suitable regulatory framework to facilitate the development of an efficient and commercially oriented petroleum sector.

6.18 In the Papua New Guinea Mining Sector Institutional Strengthening Project, the policy and institutional strengthening component reviews and develops mineral policy, strategy and regulation in order to promote exploration, and finances small-scale mining (ASM), offshore mining, mine safety and health, and mine closure. The Algeria Energy and Mining TA project assists the country on legal and regulatory matters, dealing mainly with preparation of new laws and/or regulations and procedures, including procedures for the provincial administration of mining rights and appropriate environmental norms and standards.

6.19 Mauritania's Mining Sector Capacity project aims to strengthen government's capacity to facilitate and regulate mining activities, and increase private investment in the sector, providing the basis for exploitation over the long run of the country's natural resources potential. In Mozambique's Mining Resource Project, the institutional reform and capacity building of public mining component will support modernization of regulatory framework, institutional reform/capacity building, investment promotion, and intranet.

### ***Assessment***

6.20 Experience with the Ghana Mining Sector Development and Environment TA brings forth important lessons that are generally applicable to most efforts at policy reform. First, policy issues and restructuring requirements should be clearly defined and agreed with the government in the SAR and credit agreement. Second, sectoral adjustment loans may be better instruments for pursuing policy reform rather than TAs, which have limitations in providing incentives for governments and implementing agencies to affect policy reform. Designing TA projects in tandem with sectoral adjustment loans may help obtain positive results in policy reform.

### **Property Rights**

6.21 Property rights issues — mainly related to clarifying exploration rights and access to pipelines — were addressed in only nine completed projects and five active projects, with generally satisfactory outcomes. Among the completed projects, the outcomes were satisfactory in six cases and are too early to judge in three cases.

### ***Completed Projects***

6.22 In the oil and gas sub-sector, the Bank's initiatives for clarifying rights for exploration and access included a major effort in Bolivia (Bolivia's Regulatory Reform and Capitalization Projects) where areas to be promoted under new exploration contracts using transparent bidding procedures were delimited, and the government-owned hydrocarbons

public enterprise, YPFB, was restricted to the role of monitoring the compliance of private operators with exploration and export obligations. A new regulatory regime was established in the country through CONARE, the national regulatory commission, which has developed into one of the strongest and most independent in the region. In Peru, exploration and development concessions were taken out from the ambit of the state-owned PetroPeru, and an oil pipeline was transferred to a common carrier (Peru's Privatization Adjustment project).

6.23 The Azerbaijan Petroleum TA project financed a Caspian Sea Riparian Rights Study, which has the potential to be a valuable reference for future negotiations on the contentious subject. A more predictable legal system capable of protecting property and contractual rights appears to have resulted from Albania's Structural Adjustment Credit project. In Russia, the legal regime and permits relating to mineral and land rights began to be reformulated as part of Russia's Oil Rehabilitation Projects I and II, and it was expected at the time of project completion that the duration of mineral rights may be increased up to 25 years instead of the prevailing limit of 2 years.

6.24 In the mining sub-sector, the Bank assisted Peru in establishing a public mining registry to design and implement a cadastral/concession system for new requests, which could be presented to potential investors and used in adjudication mining claims<sup>61</sup> (Privatization Adjustment project). A New Mining and Minerals Act was passed during Zambia's Economic Recovery and Investment project, which guaranteed security of title, unrestricted access to foreign exchange, companies' right to market products, freedom of commercial operation, and arbitration of disputes. Under the Guinea Mining Sector Investment Project, average time lag between application and issuance of permits was reduced from 2 months in 1996 to one month in 2000, with active permits increasing from 30 to 45.

### *Active Projects*

6.25 The Romania Mine Closure project seeks to strengthen the mining cadastral system and introduce a modern licensing system to facilitate private investment in the sector. The Madagascar Sector Reform project aims to build institutional capacity to effectively enforce laws and regulations, administer mining titles, monitor sector developments, and make geological information available to potential investors. In Mozambique's Mineral Resource Project, the institutional reform and capacity building component will support modernization of the regulatory framework, institutional reform/capacity building, mining and cadastre and registry system, investment promotion, and intranet. Argentina's Mining Sector Development TA has a component to help develop the capacity of the federal Mining Secretariat and sector agencies in selected provinces, including their cadastral and registry systems.

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61. During Peru's Privatization Adjustment Project A massive backlog and confusion of older systems was eliminated through a geological survey for obtaining, analyzing, and presenting basic information, helping to reduce a backlog of unresolved mining claims from 23,000 applications to 2000.

## ***Assessment***

6.26 The Bank's project components affecting property rights fall broadly into two groups: developing better cadastre and registry systems; and building institutional capacity to effectively enforce laws and regulations, administer mining titles. Developing cadastre and registry is a largely technical, though crucial task, and such efforts appear to have been generally carried through successfully. Building institutional capacity to effectively enforce laws and regulations, and administering mine titles is more complex, though here, too, the efforts seem to have been largely successful.

## **Institutional Capacity-Building**

6.27 Nearly half of the projects that were reviewed contained institutional capacity building objectives that were geared toward improving efficiency in the extractive industries sector and creating a better basis for private investment. Most activities were completed satisfactorily, though the outcome of some of them may be clear only in the long run.

## ***Closed Projects***

6.28 Among the positive experiences in capacity-building, Papua New Guinea's Department of Petroleum and Energy went from having a sole focus on exploration and licensing to developing substantial capacity in data collection, technical and economic analysis, planning, comprehensive management of petroleum exploration, industry regulation, and monitoring. Staff gained valuable training and exposure, but recently overall capacity has been affected by attrition (Petroleum Exploration and Development TA project).

6.29 The Bank's projects in the oil and gas sub-sector in Russia, Peru, and Bolivia helped strengthen managerial and technological capabilities for reservoir management and environmental management, as well as to improve the capacity of sectoral institutions to work with foreign suppliers and organize bidding (Oil Rehabilitation projects I and II, Peru's Energy/Mining TA, and Bolivia's Regulatory Reform and Capitalization Assistance projects).<sup>62</sup>

6.30 Among the less successful experiences in the oil and gas sector, while Zambia's Petroleum Rehabilitation project helped institutional strengthening of the Tazama (pipeline company), and Zambia Oil Company and the Ministry of Energy and Water Development, it failed to enhance the financial, operational, and managerial capability to implement and maintain investment in the pipeline and related infrastructure. The Greenhouse Gas Reduction in Natural Gas project in Russia offered important technological and methodological support to regional and local authorities in developing environmentally sound investment programs, but overall achievements were negligible due to lack of local support and logistical difficulties.

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62. Bolivia's Regulatory Reform and Capitalization Assistance projects planned to establish independent companies for negotiating existing exploration between the state-owned YPFB and international oil companies, but no follow-up action is mentioned in the project documents. The projects, however, helped establish a new regulatory system, SIRESE, which was operating satisfactorily for over three years at the time of project completion.

The Bangladesh Gas Infrastructure Development project managed to implement the Management Systems Improvement Program and the Environmental Safety Management System, but the Reservoir Management Program, intended for improving domestic skills in assessing gas reservoirs, was only partially implemented.

6.31 Among mining projects, the Mongolia Economic Transition Support project supported capacity building through technical assistance designed to enhance managerial and operational capabilities. An accounting system was installed at the ERDENET copper mine, for assisting the management in planning and restructuring operations and bringing accounting to international standards. Under Ukraine's Coal Pilot, UDKR (Ukrainian State Company for Coal Sector Restructuring) became the backbone of the government's continued program of mine closures in an environmentally and socially acceptable way. Through social assessments and workshops, the project has greatly contributed to building an understanding and consensus of ways to handle mine closures as part of coal sector restructuring.

6.32 Under the Guinea Mining Sector Investment Project, an airborne survey and a new geological map of the gold-bearing parts of northeast Guinea was completed. This contributed to an increase in exploration activity by international investors, development of a new gold and diamond mine, and improvement of Guinea's prospects as an iron ore exporter. Under India's Coal Sector Rehab project the state-owned and monopolistic Coal India Ltd (CIL) has not been able to transform itself into a fully commercialized, cost-driven enterprise capable of operating into a liberalized and competitive environment. While CIL's subsidiaries became largely independent and autonomous companies, improving their productivity, competing with each other and fixing their own prices according to market demand, they continue to be owned and operated by the central government.

6.33 In the Ghana Mining Sector Development and Environment TA, an assessment of current mining institutional arrangements was completed, and an Implementation Committee (IC) was appointed to follow up on recommendations. But it was only in the last quarter of 2000 that the IC and the sector authorities took follow-up action on "Study of Mining Sector Institutional Arrangements."<sup>63</sup> The project was, however, successful in improving the technical base at the Geological Survey Department, updating and reorganizing old geological reports, and making them accessible to investors, including ASM.

6.34 Under the Mongolia Coal Project, the Baganuur Joint Stock Company (BJSC) made a successful transformation to a financially independent company with no direct subsidies from the government. In the Tanzanian Mineral Sector Development TA, the responsibilities of the state as a mining operator were eliminated and the institutional setup of the mining sector was restructured for stimulation of private investment, regulating mineral activities, compiling and disseminating geo-information, and providing extension services to ASM. However, the comprehensive cadastral system for mineral rights and an aerial survey for

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63. Under the first objective relating to institutional development, there was initially no clear definition of specific actions to be carried out. The CR addressed this shortcoming nearly two years after project approval, and the action plan approved after further delay and at least two more years to go before completion. Lack of decisiveness on part of the government and weak coordination among participating agencies including EPA and the mining institutions added to delays in implementation of the action plan.

developing basic promotional information were not yet implemented. Progress on the institutional front was affected by the fluctuating commitment from mineral authorities. The project did not adequately consider the risks related to downturns in commodity prices, even though this does not appear to have affected project outcomes significantly due to a combination of factors including favorable geological conditions.

6.35 Under the Russian Coal SECAL I and II, Rosugol, the National Coal Company was disbanded and sectoral management responsibilities were transferred to the newly formed Ministry of Energy, while other responsibilities remained with the Inter-Agency Commission for Socio-Economic Problems in Coal Production regions.

### *Active Projects*

6.36 In the oil and gas sector, the Romania Petroleum Sector Rehabilitation project aims to assist the government in achieving the objective of its petroleum strategy to promote private sector investments in the petroleum sector, strengthen institutional capabilities, and establish a suitable regulatory framework to facilitate the development of an efficient and commercially driven petroleum sector. The project aims to assist the state companies for oil and gas in improving operational efficiency and financial management.

6.37 Chad's Petroleum Sector Capacity Building project aims to strengthen the government's capacity to manage and mitigate the impact of the Doba petroleum project. Technical assistance and logistic support will focus on engineering, monitoring, and evaluation of the Doba field area, and along the pipeline, and will build government's capacity to manage the development of the petroleum sector, providing legal TA and training of the National Environment Framework. The Chad Engineering project helps prepare project specifications, budgetary cost estimates, and tender documents with sufficient detail to permit calling for three separate turnkey contract bids (one each for pipeline, refinery, and power plant), thus ensuring the least-cost execution of the proposed petroleum and power plant.

6.38 Mozambique's Gas Engineering project aims to undertake all the work necessary to enable the government, implementing agency, and private sector investors to make a firm decision to develop the Pande gas reserves for export and domestic use, and to effect training and institutional strengthening for a substantial Mozambican role in future gas operations.

6.39 In the mining sector, Burkina Faso's Mining Capacity Building project helps establish an enabling environment to both promote private investment in mining and in a variety of mining- and environment-related technical goods and services. The Mozambique's Mineral Resource project will support various aspects of institutional development including a geophysics airborne survey, geological mapping of Mozambique, geo-chemical sampling, seismological work, documentation center, Mineral Information System, industrial minerals survey, and reinforcement of National Directorate of Geology's central laboratory network.

6.40 The Argentina Mining Sector Development project will support a services component to build up the geological and thematic mapping, a sector databank and public information network; mineral and market statistics and promotion facilities; a geological repository and ancillary facilities; and the selective strengthening of the mineral and geological laboratory system; also will finance relevant skills transfer, training, and divestiture. In Argentina's

Mining TA, institutional reform will include reorganization and staffing of key administrative units, setting up of efficient work procedures, and training of staff in public mining agencies in the 17 provinces. Mining cadastre and registry system will improve the reference mining geodetic network, introducing unified registering procedures and clear the backlog of pending concession applications.

6.41 The Mauritania Mining Sector Capacity project will help to strengthen the capacity of the Ministry of Mining and Industry (MMI) for mining law enforcement including organization and staffing of key administration units with new procedures, staff training, equipment, and rehabilitation of facilities. Additionally, geologic information will be developed with an airborne survey, computer-based cadastre, and mineral reporting systems, maps, and database of geological information. Non-discretionary procedures for granting/foreclosing of mining rights will be instituted. Studies will assess and monitor social, cultural, and economic impacts of mining-related activities on communities.

6.42 Papua New Guinea's Mining Sector Institutional Strengthening TA is intended to develop the Department of Mines' capacity to monitor and execute technical audits and mining activities by preparing monitoring and auditing strategies; implementing new institutional arrangement including organizing, staffing and work methodology; and providing training. The project also aims to strengthen DOM's mineral tenements management by conducting field assessments, and developing a database, while funding institutional strengthening for the geological survey and developing geographical information system capabilities.

6.43 Zambia's Economic Recovery and Investment Promotion TA project seeks to strengthen the ministry of Mines and Mineral Development to oversee the implementation of the New Mining Act by its geological database, its ability to promote the sector to private investors, and its capability to administer and supervise the mining sector, including small-scale miners. Tanzania's Songo Songo Gas Development and Power Generation project provides technical assistance, training, and equipment to assist the ministry of energy and Minerals strengthen gas institutional, and regulatory framework, energy management information systems, and review possible private sector participation.

### *Assessment*

6.44 Institutional capacity building in various technical, management, and policy areas is clearly a large part of the Bank's projects in the extractive industries sector. These are relatively low-cost project components and are the foundation for improving efficiencies in many areas while improving the conditions for launching new productive activities. The multiplicity of the Bank's experience in these areas puts it in a unique position to transfer the benefit of cross-country experiences to its client countries. A crucial lesson from the above project experiences is that an integrated approach is necessary in building institutional capacity for the extractive industries sector because of the strong interrelationships between a stronger legal, regulatory, and fiscal framework, improved information systems, promoting investments, and the interests of ASM and communities.

## GOVERNANCE PROCESSES

### Public Consultation and Participation

6.45 Consultative and participative decision-making processes involving all-important stakeholders — local community, and government and industry have recently emerged as important in a strategy to strengthen governance processes (see Box 6.1). In the portfolio of completed projects, public consultations of varying levels and in different forms were undertaken in only four projects. Among the active projects, significant provisions for public consultation and participation form part of the projects related to the Chad-Cameroon pipeline.

6.46 In the oil and gas sub-sector, a culture of consultation between oil companies and affected communities was developed during the construction of the Bolivia-Brazil gas pipeline, through creation of community-based organizations and committees, and consulting the public on draft regulations and the project's environmental assessment (Brazil Gas Sector Development project). The Georgia Oil Institution Building TA, provided for training in stakeholder analysis and public consultation to maximize public participation in environmental decision-making, but no follow-up is reported in the ICR.

#### **Box 6.1. Addressing Social Concerns of EI Activity: Complementary Roles of Government, NGOs, and Private Sector**

The Global Mining Initiative Conference held during May 12-15, 2002, in Toronto, Canada, by the International Council on Mining and Metals, recognized in its "Toronto Declaration" that progress toward sustainable development of extractive industries will be the product of continuous engagement with civil society. The World Bank's economic and sector work has contributed to the evolution of private industry thinking toward partnering with other stakeholders in pursuit of sustainable development of natural resources. As an example, "Integrating Social Concerns into Private Sector Decision-making" (McPhail and Davy, 1998) identifies critical success factors to ensure that social concerns are integrated into the planning and implementation of privately financed projects. As corporations must engage in partnerships with governments and civil society to be socially responsible, critical success factors must apply to each of these groups:

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|---|---|---|
| <p><i>1. Government Factors</i></p> <ul style="list-style-type: none"> <li>• Stipulate legal requirements for considering social aspects, without stifling corporate innovation.</li> <li>• Develop capacity to support such regulation.</li> <li>• Clarify responsibilities for social provisions</li> <li>• Co-finance social provisions and ensure sustainable financing.</li> </ul> | <p><i>2. Local Community and NGO factors</i></p> <ul style="list-style-type: none"> <li>• Work willingly as partners</li> <li>• Recognize legitimate role of governments to make strategic development decisions</li> <li>• Accurately reflect the desires of communities that they represent</li> <li>• Reconcile traditional role of campaigning and advocacy with emerging role as partners with governments and industry</li> </ul> | <p><i>3. Private Sector factors</i></p> <ul style="list-style-type: none"> <li>• Develop policy and capacity on social issues</li> <li>• Identify stakeholders, acknowledge perspectives</li> <li>• Identify social risks and opportunities</li> <li>• Assess social and environmental impact thoroughly; integrate where appropriate.</li> <li>• Recognize public involvement as integral to project sustainability</li> <li>• Delineate responsibilities for social provisions.</li> <li>• Aim for social equity in revenue distribution</li> <li>• Develop partnerships for sustainable development</li> <li>• Develop mechanisms for representation of stakeholders and conflict resolution.</li> <li>• Evaluate the effectiveness of social investments</li> </ul> |
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6.47 The government of India undertook effective public consultation procedures with the concerned state government, union leaders, tribal communities, and NGOs in the course of the Jharia Mine Fire Control TA project. The Russian Coal Implementation Assistance Project (IAP) in conjunction with the country's Coal SECAL I and II projects provided support for stakeholders' participatory activities, especially local trade unions and Association of Mining Cities.

6.48 Among the active projects, the Chad-Cameroon Pipeline project has involved public consultations in the preparation of the project's Environmental Assessment and Environmental Management Plan. Extensive and frequent public consultation has also taken place on the subject of likely project impacts and compensation measures. Compensation rates for all crops, trees, and other assets have been well researched and discussed with affected people in all categories of land tenure. The private sponsors will pay compensation at real market values, which are over and above government schedules.

### ***Assessment***

6.49 Recourse to public consultation and participation was quite rare across the portfolio of extractive industries projects. This is a major gap in a sector where production and rehabilitation activities directly affect the livelihood and environmental and social well being of large numbers of people, and where sharing of benefits needs to be done in a cooperative and transparent manner to prevent the dangers of rent-seeking behavior. The prominent examples of public consultation have occurred in countries with relatively higher levels of education and per capita incomes. In the light of this finding, it would be important to develop suitable mechanisms to ensure that affected people who are less literate and economically weak are given appropriate and fair means to register their feedback on issues that affect them. The provisions established for the Chad-Cameroon projects represent a particularly important pilot experience in this area.

### **Public Disclosure and Information Dissemination**

6.50 Public disclosure and information dissemination, including conduct of opinion surveys, figured in only six completed projects. Opinion surveys of project beneficiaries were conducted in six projects in Albania, Poland, Ukraine, and Peru. Public information and communications campaigns were mounted with six completed projects in Albania, Poland, Peru, Bolivia, and Zambia, with mixed results. Among Active projects, the four projects associated with the Chad-Cameroon Pipeline contain significant provisions for significant efforts at public disclosure and information dissemination.

6.51 In Albania, as part of the Structural Adjustment Credit project (in which mining was only one component), the government conducted a survey of citizens' satisfaction with services, governance, and institutional reform strategy and received generally favorable feedback. A survey of beneficiaries and stakeholders was made under Poland's Coal SECAL I and II projects, while Poland's government also initiated an intensive dialogue with representatives of local government, labor unions, and NGOs. Under Poland's SECAL II continuing six-monthly surveys that were started under the first SECAL showed that 60 percent of the miners viewed MSP positively while most of the others were concerned about

lack of alternative employment opportunities. Of those seeking to return to the workplace 52 percent have been successful, while 85 percent advise that they have sufficient funds to support their families. In the Ukraine Coal Pilot and Coal SECAL projects, an independent institute was involved in monitoring of social rehabilitation efforts with affected parties, and obtained generally positive feedback from project beneficiaries.<sup>64</sup> A public opinion survey was conducted following the Privatization Adjustment Project in Peru.<sup>65</sup>

6.52 A public information campaign was mounted in Poland's Hard Coal SECAL I and Albania planned to undertake and publicize a review of the impact of each element of its governance and institutional reform strategy that had a component of mining closure and rehabilitation (Albania Structural Adjustment Credit project). Following a controversy with its mapping work (see para. 4.20), the Ecuador Mining TA project began a dissemination effort to present scientific facts through various public forums. Bolivia's public information campaign on the benefits of the reform was not sufficient or effective enough to answer public criticism of the Regulatory Reform and Capitalization projects regarding benefits of newly capitalized firms. Zambia's efforts to produce an NGO policy paper proved insufficient to bridge the gap between the complex groups of NGOs and the government. Ukraine failed to respond adequately with appropriate information or disclosure to damaging reports in the media on the conduct of coal sector reform, and in the process, may have invited needless political opposition to the reform process.

### *Assessment*

6.53 The experience with public disclosure is similar to that for public consultations and participation. There are few reported instances in the entire portfolio of projects, and those relate to almost the same set of country experiences, which is not unexpected since the two areas are interrelated.

### **Promoting Transparency and Reducing Corruption**

6.54 Promoting transparency and reducing corruption did not figure as explicit objectives in any of the 48 completed projects that were reviewed. However, some technical assistance components, such as those relating to accounting standards, bidding processes, and better management practices, had the effect of improving transparency, some of which may have lasting effects. There was one instance of misuse of project funds that was eventually redressed. Overall, there were 14 components that related to transparency or corruption, some of which were minor in scope.

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64. In the Ukraine Coal Pilot and Coal SECALs, representatives of affected parties along with an independent institution, the Ukraine Design Institute, conducted participatory monitoring of relating to severance pay, training and assistance for re-employment, and adequate level of health and education services. Two social surveys during midterm and at the end of the project were conducted, which showed that unemployed miners and miner pensioners do receive unemployment benefits in time and in full. There was also some attempt to monitor the environmental system and inform project implementation in the pilot phase

65. A public opinion survey conducted following the Privatization Adjustment Project in Peru saw a steady erosion of support of from a high of 62 percent in 1992 of 29 percent in 1999 for the privatization process in general, especially in the lowest economic strata.

6.55 The Bank's funding for Peru's Committee for Promotion of Private Investment (COPRI) helped it function with greater independence during the sale of state-owned enterprises (Peru's Privatization Adjustment project) and open and transparent bidding was used for the first time for petroleum imports, which helped to reduce costs of petroleum purchases (Petroleum Sector Reform project). Transparency was improved through upgrading accounting and auditing procedures during Azerbaijan's Petroleum TA, Thailand's Gas Transmission project, as well as under Madagascar's Petroleum Sector Reform project

6.56 A notable achievement of the Peru Energy/Mining TA was that the government and public have accepted the concept of autonomous regulatory operators with stable and non-discriminatory rules. The funds for the Miners' Social Package (MSP) scheme under Poland's Hard Coal SECAL were properly accounted for through audits, and accountability of mining companies was improved through more transparent company business plans and operating plans.

6.57 In the Ukraine Coal SECAL project, the small business component saw some fraud in applications for micro-credit and employment subsidies, but follow-up measures to prevent recurrence were effective. Some administrative problems that encountered during audits of the employment restructuring funds and mine liquidation funds in Poland's Coal SECAL I were satisfactorily resolved and it was confirmed that the funds had been used properly.

6.58 There were some less successful experiences, as in Zambia's Second Economic and Social Adjustment project where bilateral donors suspended program lending because of their concerns about governance issues. The Bank's sector policy initiatives in Russia helped underline the importance of institutional regulations surrounding transparent allocation of quotas and access to export pipeline facilities (Oil Sector Rehabilitation I and II projects), though a draft law for this purpose fell short of expectations. Albania's Anti-Corruption Plan sought to build a web of institutional capacities to encourage public officials and others to be less corrupt, which applies to the hydrocarbon and mining sectors as well as other sectors, but no information on follow-up action was available.

6.59 In Bolivia's Regulatory Reform and Capitalization Assistance projects, detailed asset valuation helped set a benchmark to ensure a fair bidding process and the privatization process were considered most transparent by investors. However, the government's scheme for sharing the proceeds of capitalization with specified sections of the population was marred by cases of fraud by claimants who falsified their ages to claim benefits. During the Guinea Mining Sector Investment Project, the Ministry of Mines, Geology and Environment (MMGE), negotiated mining rights with potential private investors in a non-transparent way, in respect of bauxite and alumina concessions, especially for the Dian Dian deposits. Though outside the scope of the project, these actions could well have affected the interest of potential investors for activities undertaken within the ambit of the project. However, on another count, budgetary transparency was improved by the elimination of the Agency for the Management of Mines Infrastructure (ANAIM). Under the Mongolia Coal Project, modern financial accounting, budgeting, and cost accounting have been introduced and adopted.

## *Assessment*

6.60 The scope of the identified actions from the project portfolio relating to governance and transparency tends to be quite narrow, relating to specific steps in the sequence of project-related activities. In most of the identified components, the link with better governance and transparency is incidental, and does not follow from a stated objective of the project. None of the projects have any stated objectives dealing with larger governance or transparency issues, though these are recognized in many CASs. One reason for this could be the political sensitivities attached to this subject, making it difficult to convince client countries to adopt specific objectives in this regard. Another possibility is that these issues, being common to many sectors, may need to be dealt with in other cross-sectoral projects. Both these propositions need to be probed further to yield options for how the important issues of governance and transparency in the generation and utilization of revenues from extractive industries need to be addressed.

## **CONCLUSIONS AND IMPLICATIONS FOR FURTHER WORK**

6.61 Judging from the portfolio of completed projects, the Bank does not appear to have a systematic approach to building good governance through its extractive industries projects. With significant exceptions, most of the efforts affecting the institutional and policy framework appear fragmented or sporadic. The more comprehensive efforts — such as for privatization — have occurred as part of countrywide reforms through adjustment loans, as in Bolivia and Peru. Otherwise, the majority of the project components is piecemeal in nature and tied to the specific concerns of individual investment projects or technical assistance projects. Governance processes, especially those concerning transparency, have received low priority, which is out of keeping with their acknowledged importance in securing economic benefits from the extractive industries for sustainable development.

6.62 As with the management of revenues and environmental and social safeguards, the governance framework for the extractive industries needs to operate in the context of the institutional arrangements in the larger economy. It may not be surprising therefore, to find limited evidence of projects at the sectoral level to deal with these issues. Once again, there is a need to look at the initiatives taken by the Bank to help client countries move toward more market-oriented and responsive institutions and policies, and the dialogue for improving transparency and reducing scope for corruption, that affect the whole economy including the extractive industries sector. This thematic review better assess the extent to which the Bank is addressing the governance needs of client countries in respect of the extractive industries sector.

## **7. Conclusions and Implications for Further Work**

### **MAIN CONCLUSION**

7.1 How effectively has the World Bank assisted its client countries in improving the contribution of the extractive industries to sustainable development? The preliminary findings from the portfolio review suggest a two-part answer. On the one hand, the Bank has been

reasonably effective in implementing projects that yield satisfactory outcomes and at least partially comply with environmental and social safeguards. On the other hand, these projects have devoted only limited effort to addressing the fiscal revenue management and governance issues that are essential for the transformation of mineral wealth into sustainable development. Thus, while the Bank's performance at the project level has been broadly satisfactory, it has lacked an integrated approach for assisting resource-abundant countries in addressing the observed phenomenon of many resource-abundant countries' falling short of their developmental expectations based on resource extraction, and frequently suffering from poor governance.

7.2 The above conclusion is based on the proposition that sound fiscal policies, rigorous mitigation of negative environmental and social impacts, and good governance constitute the antidote to the paradox of plenty. Given this proposition, the portfolio review has focused on three major areas: (i) generation of economic benefits from extractive industries, fiscal management, and expenditure; (ii) mitigation of environmental and social impacts; and (iii) building good governance. Additional work in each of these areas will be needed to validate and shore up the preliminary findings with additional work on Bank activities beyond the project portfolio that are highly relevant for this evaluation but have not yet been covered. To the extent feasible, the country case studies and thematic reviews will attempt to trace the actual outcomes and impact of selected and related economic and sector work and other non-lending activities.

## **IMPLICATIONS FOR FURTHER WORK**

### **Economic Benefits and Revenue Management**

7.3 Based on a desk review of the portfolio, most (80 percent) extractive industry projects had satisfactory outcomes and can be expected to have yielded positive economic benefits. However, while fiscal revenue management and expenditure issues are frequently (in 60 percent) raised in the CASs of resource-abundant countries, only a small number (25 percent) of extractive industry operations have focused on revenue management. In particular, none of the projects addressed issues of public expenditure, an essential requirement for converting resource rents into sustainable development. Nevertheless, since fiscal policy issues tend to be addressed at the country level, rather than through sector-specific projects, the assessment of the Bank's effectiveness in this area will require further analysis beyond the extractive industries portfolio.

7.4 The portfolio review will be supplemented by a thematic review of the Bank's experience in assisting resource-abundant countries manage the revenue windfalls from extractive industries development. The thematic review will evaluate the effectiveness of the Bank's advice and support to its borrowers in (i) managing the volatility and exhaustibility of fiscal revenues (taxes, royalties, equity shares, and other) from the extractive industries, with the objective of mitigating macroeconomic fluctuations and stabilizing expenditure; and (ii) allocating public expenditure in support of sustainable development. The study will be based on a desk review of Bank projects in a sample of about five resource-abundant (oil, gas, or mineral) countries, selected with due consideration of regional diversity and the different types of Bank initiatives (lending and non-lending, sector-specific, and economy-wide). This

review is expected to yield specific lessons and recommendations on how the Bank can help its client countries manage the volatility and exhaustibility of revenues from resource extraction, and allocate these revenues in support of sustainable development.

### **Environmental and Social Impacts**

7.5 In relation to consistency with the Bank's safeguard policies, the portfolio review — based on ICRs and other project documents — came across a single reported violation, and only a few minor instances of negative environmental and social impacts. However, the coverage and quality of the reporting system leaves much to be desired. Overall, since this finding is at variance with the heavy criticism to which the Bank and industry has been subject, we have now begun a detailed desk review of the portfolio's consistency with applicable safeguard policies and the adequacy of measures to mitigate adverse environmental and social impacts.

7.6 The expected result of the consistency review is an assessment of the reliability of the Bank's safeguards monitoring and reporting processes. This work, to be supplemented by selected field checks, is expected to result in useful findings and recommendations on how the Bank can further strengthen the implementation of safeguards.

### **Addressing the Governance Challenge**

7.7 Judging from the portfolio of extractive industry projects, the Bank does not appear to have a systematic approach to supporting the creation and maintenance of good governance in resource-abundant countries that appear to be particularly vulnerable to risks in this area. The majority of projects (about 60 percent) have focused on institutional development and reform: reforming the legal framework, privatization, and strengthening institutional capacity. Far less effort (in only 20 percent of projects) has been devoted to governance processes, such as transparency, public consultation and participation, and reducing corruption. The fragmented and sporadic attention to governance processes is appears to be at variance with the widespread recognition, in the research literature and civil society feedback, that inadequate political economy processes are at the heart of the inability of many resource-abundant countries to maximize the developmental contribution of their extractive industries.

7.8 Nevertheless, since governance processes tend to be considered and addressed at the country level, this evaluation would not be complete without considering the Bank's activities beyond the sectoral context. This gap will be filled with a thematic assessment of the initiatives undertaken by the Bank to help resource-abundant countries address governance issues. This assessment will cover Bank initiatives designed to strengthen governance processes in the critical areas relevant for the overall evaluation, including fiscal revenue management, public expenditures, protecting the environment, protecting local community interests, and protecting investors. It will be based on a desk study of a sample of 5 to 10 resource-abundant countries, and be supported by inputs from selected PPARs and country case studies. Here again, a thematic review planned to assess broader range of Bank initiatives and yield specific lessons and recommendations for future initiatives to address the governance challenge.



## Annex A. Portfolio of Extractive Industries Projects: FY93–FY02

**Total Number of Projects: 76**  
**Oil & Gas (Completed 24; Active 15); Mining (Completed 24; Active 13)**

Oil & Gas: Completed Projects								
Project Title	Region	Country	Lending Instrument	FY Approval	FY Completed	EA Category	Project Cost (US\$ M)	WB Loan (US\$ M)
Petroleum Technical Assistance II	AFR	Equatorial Guinea	Technical Assistance	1993	1998	C	3	3
Calub Energy Development	AFR	Ethiopia	Specific Investment	1994	2001	A	14	14
Petroleum Sector Reform	AFR	Madagascar	Sector Investment and Maintenance Loan	1993	1999	B	6	5
Petroleum Sector Rehabilitation	AFR	Tanzania	Specific Investment	1991	2001	B	0	0
Petroleum Rehabilitation	AFR	Zambia	Specific Investment	1994	2000	B	19	4
Petroleum Exploration & Development Technical Assistance	EAP	Papua New Guinea	Technical Assistance	1994	2001	C	13	11
Petroleum Distribution & Sector Management	EAP	Republic of Korea	Specific Investment	1993	1999	A	653	112
Bongkot Gas Transmission	EAP	Thailand	Specific Investment	1993	1996	A	334	92
Second Gas Transmission	EAP	Thailand	Specific Investment	1995	1998	A	482	111
Clean Fuels and Environment Improvement	EAP	Thailand	Specific Investment	1995	2000	A	41	38
Petroleum Technical Assistance	ECA	Azerbaijan	Technical Assistance	1995	2001	C	10	20
Natural Gas System Reconstruction	ECA	Bosnia-Herzegovina	Emergency Rehab.	1997	2000	B	44	10
Oil Institution Building Technical Assistance	ECA	Georgia	Technical Assistance	1997	2001	C	1	1
Petroleum Technical Assistance	ECA	Kazakhstan	Specific Investment	1994	2000	C	14	13
GHG Reduction in Natural Gas (GEF)	ECA	Russian Federation	Global Environment Facility (GEF)	1996	1999	C	1	1
Oil Rehabilitation Project	ECA	Russian Federation	Specific Investment	1993	2000	A	1035	414
Second Oil Rehabilitation Project	ECA	Russian Federation	Specific Investment	1994	2000	A	678	346
Third Structural Adjustment Loan	ECA	Russian Federation	Structural Adjustment	1999	2001	U	1500	1500
Oil Pipeline Engineering Project	ECA	Turkey	Technical Assistance	1997	1999	C	3	3
Hydrocarbon Sector Reform & Capitalization Technical Assistance	LAC	Bolivia	Technical Assistance	1996	1999	B	9	11
Gas Sector Development Project	LAC	Brazil	Specific Investment	1997	2001	A	1594	130
Energy Technical Assistance	LAC	Colombia	Technical Assistance	1995	2002	B	12	11
Energy and Mining Technical Assistance	LAC	Peru	Technical Assistance	1993	1999	B	16	11
Gas Infrastructure Development	SAS	Bangladesh	Specific Investment	1995	2000	A	135	68

Oil & Gas: Active Projects							
Title	Region	Country	Lending Instrument	FY Approval	Environmental Assessment Category	Project Cost at Appraisal (US\$ M)	Bank Loan at Appraisal
Oil Spill Contingency	AFR	Africa	Global Environment Facility (GEF)	1999	C	5	3
Petroleum Environment Capacity Enhancement Project	AFR	Cameroon	Technical Assistance	2000	C	11	6
Chad/Cameroon Pipeline	AFR	Cameroon	Specific Investment	2000	A	3500	90
Chad Petroleum Power Engineering	AFR	Chad	Specific Investment	1991	C	14	22
Petroleum Development & Pipeline Project	AFR	Chad	Specific Investment	2000	A	3724	93
Petroleum Sector Capacity Building	AFR	Chad	Specific Investment	2000	C	26	24
Management of the Petroleum Economy Project	AFR	Chad	Specific Investment	1999	C	19	18
Gas Engineering	AFR	Mozambique	Specific Investment	1994	B	49	30
Songo Songo Gas Development and Power Generation Project	AFR	Tanzania	Specific Investment	2001	A	313	183
GEF Sichuan Gas Development & Conservation	EAP	China	Specific Investment	1994	A	945	265
Gas Development Technical Assistance	EAP	Papua New Guinea	Technical Assistance	2000	C	8	7
Energy Transit Institutional Building	ECA	Georgia	Technical Assistance	2001	C	12	10
Uzen Oil Field Rehabilitation	ECA	Kazakhstan	Specific Investment	1997	A	136	109
Petroleum Sector Rehabilitation	ECA	Romania	Specific Investment	1994	B	346	176
Emergency Oil Spill Mitigation	ECA	Russian Federation	Emergency Rehabilitation	1995	C	140	99

Mining: Completed Projects								
Title	Region	Country	Lending Instrument	FY Approved	FY Completed	Env. Assessment Category	Project Cost (US\$ M)	Bank Loan (US\$ M)
Mining Sector Development & Environment	AFR	Ghana	Specific Investment	1995	2002	B	13	9
Mining Sector Investment Promotion	AFR	Guinea	Technical Assistance	1996	2001	C	16.8	23
Mining Sector Development	AFR	Tanzania	Technical Assistance	1995	2002	B	13	12
Second Economic and Social Adjustment Credit	AFR	Zambia	Structural Adjustment	1996	1998	U	90	90
Econ. Recovery and Inv. Promotion Credit	AFR	Zambia	Sectoral Adjustment	1996	1998	C	140	140
Public Sector Reform and Export Promotion Credit Project	AFR	Zambia	Structural Adjustment	1999	2001	U	170	170
Economic Transition Support	EAP	Mongolia	Rehabilitation Investment	1994	1997	U	26	23
Mongolia Coal Project	EAP	Mongolia	Specific Investment	1996	2002	B	61.9	0
Structural Adjustment Credit	ECA	Albania	Structural Adjustment	1999	2001	U	45	45
Hard Coal Sectoral Adjustment	ECA	Poland	Sectoral Adjustment	1999	2001	B	300	300
Hard Coal Sectoral Adjustment II	ECA	Poland	Sectoral Adjustment	2002	2002	B	100	100
Coal Sectoral Adjustment	ECA	Russian Federation	Sectoral Adjustment	1996	1997	B	500	500
Coal IAP	ECA	Russian Federation	Technical Assistance	1996	2003	C	31	17
Coal Sectoral Adjustment II	ECA	Russian Federation	Sectoral Adjustment	1998	2002	B	800	800
Priv. Impl. Assistance & Social Safety Net	ECA	Turkey	Technical Assistance	1994	2000	C	129	30
Coal Pilot	ECA	Ukraine	Specific Investment	1996	2001	B	28	13
Coal Sectoral Adjustment	ECA	Ukraine	Sectoral Adjustment	1996	2000	B	300	300
Capitalization Program Adjustment Credit	LAC	Bolivia	Sectoral Adjustment	1996	1999	B	147	65
Reg. Reform and Cap. TA	LAC	Bolivia	Specific Investment	1994	1999	C	30	15
Env. Conservation and Rehabilitation (CVDR)	LAC	Brazil	Specific Investment	1996	2000	B	87	36
Mining Dev. and Env. Control TA	LAC	Ecuador	Technical Assistance	1994	2001	A	24	11
Privatization Adjustment Loan	LAC	Peru	Sectoral Adjustment	1993	1998	C	280	280
Coal Sector Rehab	SAS	India	Specific Investment	1998	2001	A	1697	263
Jharia Mine Fire Control TA	SAS	India	Technical Assistance	1993	1999	B	11	8

Mining: Active Projects							
Title	Region	Country	Lending Instrument	FY Approved	Env. Assessment Category	Project Cost (US\$ M)	Bank Loan (US\$ M)
Mining Capacity Building	AFR	Burkina Faso	Specific Investment	1997	C	22	21
Mining Sector Reform Project	AFR	Madagascar	Learning and Innovation Loan	1998	C	22	21
Mining Sector Capacity	AFR	Mauritania	Technical Assistance	1999	C	16	15
Mineral Resources Project	AFR	Mozambique	Technical Assistance	2001	C	33	18
Economic Recovery and Investment Promotion TA	AFR	Zambia	Technical Assistance	1996	C	27	23
Mine Township Services Project	AFR	Zambia	Specific Investment	2000	B	38	38
Mining Sector Institutional Strengthening TA	EAP	Papua New Guinea	Technical Assistance	2000	B	12	10
Mine Closure	ECA	Romania	Specific Investment	2000	B	62	44
Privatization Social Support	ECA	Turkey	Specific Investment	2001	C	355	250
Mining Sector Development	LAC	Argentina	Technical Assistance	1996	B	40	30
Mining Technical Assistance	LAC	Argentina	Technical Assistance	1998	B	46	40
Energy & Mining TA Loan	MNA	Algeria	Technical Assistance	2001	C	22	18
Coal Environment & Social Mitigation	SAS	India	Specific Investment	1996	C	84	63

## Annex B. Extractive Industries–Dependent Countries\*

Country	Oil & Gas				
	Average Oil & Gas Share of Total Exports <sup>1</sup> , 1990–99 (%)	Population 2000 <sup>2</sup> (millions)	Population below Poverty Line <sup>3</sup> (%)	GNI/Capita <sup>2</sup> (US\$: 1999)	Average GDP/capita growth <sup>2</sup> , 1990–99 (%)
Yemen	89.0	17.5	19	390	1.46
Congo, Rep.	88.1	50.9	—	560	-3.27
Nigeria	86.8	126.9	34	250	0.2
Oman	86.4	10.8	—	n/a	0.95
Angola / Cabinda	83.5	1.6	—	410	-2.03
Iran	82.0	63.7	—	1600	3.01
Turkmenistan	74.5	5.2	—	640	-7.11
Gabon	73.8	1.2	—	3300	-0.07
Venezuela	56.9	24.2	31	3730	0.16
Syria	48.9	16.2	—	930	3.19
Cameroon	33.5	14.9	40	600	-2.11
Ecuador	30.4	12.6	35	1330	-0.27
Algeria	28.7	30.4	23	1540	-0.49
Kazakhstan	23.1	14.9	35	1290	-4.36
Papua New Guinea	20.0	4.8	—	770	2.26
Trinidad / Tobago	16.3	1.3	—	4660	2.01
Russian Federation	16.2	145.6	31	1750	-4.9
Azerbaijan	15.8	8.0	68	570	-2.18
Vietnam	15.8	78.5	51	370	5.51
Colombia	14.7	42.3	18	2150	0.92

\* World Bank eligible borrowing countries with population over 1 million

Sources: <sup>1</sup> World Bank and International Finance Corporation (2002); <sup>2</sup> *World Development Indicators, Central Database, World Bank*. <sup>3</sup> *World Development Indicators, World Development Report 2003*;

— : Not Available.

Country	Mining				
	Average Mining Share of Total Exports, 1990–99 <sup>1</sup> (%)	Population 2000 <sup>2</sup> (millions)	Population below Poverty Line <sup>3</sup> (%)	GNI/Capita <sup>2</sup> (US\$, 1999)	Average GDP/capita growth <sup>2</sup> , 1990–99 (%)
Guinea	84.7	7.4	40	490	1.42
Congo (Dem. Rep.)	80.0	51.4	—	100	-6
Zambia	74.8	10.1	86	320	-2.3
Niger	70.6	10.8	63	190	-1.5
Botswana	70.0	1.6	—	3040	2.53
Namibia	55.4	1.7	—	2100	1.6
Jamaica	51.3	2.6	19	2400	-0.13
Sierra Leone	50.0	5.0	68	130	-6.31
Suriname	48.3	0.4	—	1350	2.71
Chile	46.6	15.2	21	4600	4.86
Mauritania	46.0	2.7	57	390	0.55
Papua New Guinea	44.8	4.8	—	770	2.11
Peru	43.7	25.7	49	2130	1.5
Mongolia	43.0	2.4	36	390	-1.64
Central Afr. Republic	42.1	3.6	—	290	-0.82
Ukraine	40.0	49.6	32	770	-8.63
Mali	40.0	10.8	—	240	0.69
Togo	37.7	4.7	32	310	-1.27
Bolivia	35.6	8.3	—	990	1.63
Guyana	35.0	0.9	—	760	4
Ghana	34.0	19.2	31	400	1.55
South Africa	30.0	42.8	—	3160	-0.67
Jordan	28.9	4.9	12	1630	0.4
Kazakhstan	23.2	14.9	35	1290	-4.36
Kyrgyz Republic	21.2	4.9	51	300	-4.58
Morocco	20.0	28.7	19	1190	0.73
Armenia	20.0	3.8	—	490	-2.6
Uzbekistan	18.4	24.7	—	640	-2.46
Cuba	17.8	11.2	—	500	5.6
Tanzania	15.8	33.7	42	260	0.36

Sources: <sup>1</sup>World Bank and International Finance Corporation (2002); <sup>2</sup>World Development Indicators, Central Database, World Bank. <sup>3</sup>World Development Indicators, World Development Report 2003;

— : Not Available

## Annex C. Extractive Industries and Sustainable Development: A Brief Survey of the Literature

1. In recent decades, many *resource-abundant* developing nations have experienced significantly lower rates of growth compared to *resource-poor* developing economies. The performance of resource-abundant economies is even more disappointing in countries that depend upon the extractive industries — petroleum, natural gas and mining (Sachs and Warner 1997).
2. While extractive industries are important contributors to the economic development of many countries, they also provide scope for rent seeking activities and distorted public expenditure policies that exacerbate income inequality. Countries with large extractive industries sectors have often been associated with poor governance and inability to manage windfall revenues to yield sustainable growth (Gelb 1988). Lack of proper planning and management of extractive industries has often resulted in adverse social and environmental impacts. Indeed, this paradox, in which many resource-abundant countries have fallen short of their developmental expectations based on resource extraction, and frequently suffer from poor governance, has come to be referred to as the “paradox of plenty.”
3. The “paradox of plenty” has been addressed by researchers in economics, and political and social science for the past twenty years, including those from the World Bank Group. Several explanations of the paradox have been proposed in the literature (Auty 2001). However, at the moment, there does not appear to be a single model that synthesizes and explains how natural capital interacts with institutional, social and political factors to affect the efficiency with which rents from the extractive industries can be transformed into sustainable development.
4. The World Bank has played an important role in contributing to understanding the “paradox of plenty” through its economic research work.<sup>66</sup> The management of oil windfalls has been the subject of important research studies since the early 1980s (Gelb, 1984, 1988; Everhart and Duval-Hernandez, 2001). Several studies have focused on environmental and social issues related to extractive industrial activities, including community involvement (World Bank, 1990, 1994; McMahon, 1999; McPhail, 2001).
5. The emerging consensus appears to be that the underperformance of resource-abundant developing countries is not inevitable, to the extent that most of the factors that explain the “paradox of plenty” are the result of institutional and policy failure. Overall, while the technical requirements for managing volatile and exhaustible revenue flows, and devoting them to sustainable development are well understood, they are difficult to implement due to political economy issues. Thus, creating good governance is at the heart of the institutional and policy changes needed to improve fiscal management and maximize the benefits from the development of the extractive industries.

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66. A more detailed review of the literature from both World Bank and other sources is given in *Annex I*.

### Explaining the “Paradox of Plenty”

6. In recent years, many researchers have weighed in with theories to explain the significant differences in growth performance from the mid-1970s to the mid-1990s among economies with differing natural resource bases. The explanations span the economic, political and social points of view.

7. *Economists* have argued mainly in terms of the “entrenched equality effect” and the “Dutch disease.” The “entrenched equality effect, developed mainly in the context of crop resources, argues that the nature of property rights regimes — landed elites vs. distributed and secure property rights — were an important cause of the divergence in growth trajectories. The “Dutch disease” argument proposes that a boom in the resource sector can lead to a rise in the relative price of non-tradables, causing resources to shift from tradables to non-tradables, and a reduction in exports and increase in imports. This results in lower capital accumulation and slower long-term growth than if the country had no resources (Cordon and Leary 1982).

8. *Political scientists* have argued in terms of “rentier” and (counter) “modernization effects.” Rentier effects occur where rent-seeking ruling elites fend off criticism and accountability through a combination of graft and repression. Counter-modernization effects occur where dependence on natural resources thwarts secular modernization pressures because a small pool of expatriate skilled persons drives the main economic activity. As a result, there is little pressure generated within the country for urbanization, education and occupational specialization (Ross 2001).

9. *Social Scientists* have explained growth patterns in terms of the trustworthiness and credibility of institutions (Keefer and Knack 1997). Easterly and Levine (1997) argue that high levels of ethnic and linguistic fractionalization in Africa, coupled with high spillover effects of one country’s policies on its neighbors can explain the region’s growth rates to a considerable extent. Collier and Gunning (1999) highlight the case of sub-Saharan Africa as an unhappy confluence of growth-reducing factors, isolationist trade policies, deficient public services, unfavorable geography, political instability, lack of financial depth, high aid dependence, and low social capital — both civic (community cohesion) and public (political and legal infrastructure). Civic social capital is seen to be undermined by ethnic fractionalization and high inequality, and *public* social capital is eroded by unselected and unaccountable rent-seeking political elites.

### Attempting a Synthesis

10. While each formulation is valid, the economic, political and social arguments can be grouped into “social divisions effects” and “governance effects” to provide a more insightful explanation of the “paradox of plenty” (Auty 2001). This also echoes earlier explanations of growth expansions and collapses since 1960 in which the key variables are social cleavages and institutional capacity (Rodrik 1999). The resulting synthesis points to two development paths: the *competitive industrialization* of resource-poor countries and the *staple trap* of the resource-abundant countries.

### Contrasting Development Paths: *Competitive Industrialization* and the *Staple Trap*

11. Under *competitive industrialization* — favored by mainstream economists — a resource-poor country counts on early reform to establish economic and social conditions that are mutually reinforcing, and therefore to build a constituency for efficient investment and sustained and equitable growth. The broad-based nature of the economy (relative to resource-abundant economies) reduces scope for rent-seeking behavior. On the other hand, in *resource-abundant* countries, the longer initial dependence on primary products slows the economic growth rate and postpones the labor intensive stage of the model, stunts skill acquisition while income inequality and associated social tension grows. This is particularly true in smaller resource-abundant countries that may have more limited scope for diversification into other economic activities. This influences the political economy and increases the possibility of resource rents being diverted to appease special groups at the expense of sustained growth.

12. In the *staple trap* formulation — favored by structuralist economists exemplified by Raul Prebisch — a country opts to protect domestic industry to force the pace of industrialization and expansion of public sector employment. This invariably results in a slow-maturing and unproductive public sector that demands transfers from the primary sector. This generally leads to the political state increasing its power by distributing natural resource rents to favored groups at the cost of a coherent policy for increases in social welfare. Commodity windfalls are likely to be used unwisely to reverse or postpone necessary reform rather than facilitate its implementation. As distortions to the economy mount, they depress capital efficiency, leading the economy into a staple trap. Eventually, the country becomes highly vulnerable to the volatility in prices of the export commodities that it specializes in. The increasingly difficulty of providing the wherewithal for competitive diversification increases surplus labor, depresses the wages of the rural poor and exacerbates income inequality that slows social capital accumulation, intensifies social tensions, and weakens the political capacity to deal with shocks. The rate of growth will slow and become erratic.

### Country Experiences

13. The process of competitive industrialization and the staple trap played out in different ways across the developing world. Among *resource-poor* countries many nations of East Asia demonstrated the positive effects of competitive industrialization. Despite being endowed with the most constrained resource endowment and smallest rent stream, they sustained exceptionally rapid economic growth during the 1970s to the 1990s, which was relatively egalitarian. At the other extreme, the *resource-abundant* countries with the highest share of natural resource rents in GDP, the small oil exporting countries, have exhibited least economic resilience. Many of them experienced a growth collapse after falling into a staple trap of growing dependence of commodities whose competitiveness was eroding. Even the larger resource-abundant economies performed poorly, although they had the most favorable conditions — in term of options to diversify their economies — to avoid the staple trap.

14. On the other hand, a small number of *resource-abundant* economies (Malaysia, Oman, Botswana, and Chile) succeeded in achieving impressive growth rates during most of

the 1970s to 1990s. Their experience suggests strongly that — to the extent that policy error caused the growth collapses and policies are options — the observed inverse relationship between natural resource abundance and economic development is not a deterministic one (Auty 2001). The more successful resource-abundant countries diversified out of low-growth commodity exports into high growth commodity exports, whereas the less successful ones exhibited no such flexibility, mainly on account of policy failure. The key to improved performance for poorly performing resource-abundant countries therefore lies in an appropriate policy response. However, implementation of policy reform will be a difficult process.

### **Policy Response**

15. Sound macroeconomic management backed by institutional reinforcement can encourage the growth of a developmental state. This includes price stabilization and fiscal discipline. Since initially, hard decisions will have to be taken in setting priorities for public expenditure, the process needs to be sensitive to social returns, rather than to political returns. It must therefore be directed away from vested interests towards hitherto neglected high return areas that also improve income distribution like primary education, health care and infrastructure. On the revenue side, it is needed to widen the tax base, even though economic growth prospects can initially receive a double blow because other slower growth in the economy during reform may be accompanied by an overall fall in domestic savings and investment. Price liberalization calls for exchange rate stabilization, among others, but sharp fluctuations in export revenue may place pressure on the real exchange rate and destabilize government expenditures (Auty 2001).

### **THE ROLE OF REVENUE STABILIZATION FUNDS IN MANAGING REVENUE VOLATILITY**

16. It has been frequently suggested that a commodity revenue stabilization fund be created to help manage revenue volatility (Auty 2001). Experience with such funds has been mixed the past, with the few important successes coming from developed or middle-income country situations (Norway, Chile). The available evidence (Davis et al, 2001) suggests that in most countries, the establishment of a stabilization fund did not have an identifiable impact on spending. Countries with prudent expenditure policies tended to establish a stabilization fund, rather than such a fund leading to increased expenditure restraint. In several cases, the integration of the fund's operations with overall fiscal policy has proven problematic and despite the operation of the fund, the stabilization of expenditure has remained elusive. Moreover, there is evidence that funds may have been most difficult to operate when the extent of reliance on resource revenues has been largest.

### **LIBERALIZING MARKETS AND PROMOTING INSTITUTIONAL REFORM**

17. Financial liberalization towards market rates is desirable, though it must be kept in mind that if they rise too high, investment will be discouraged and government's debt servicing will be squeezed. Property rights should be secured to encourage foreign and domestic investment including the informal sector. This requires a reduction in regulation to remove barriers to entry, reduce scope for rent-seeking and corruption.

## **GOVERNANCE AND CORRUPTION**

18. The extent of corruption depends upon natural resource abundance, government policies and the concentration of bureaucratic power. Furthermore, the effects of natural resource discoveries and anti-corruption policies depend crucially upon the country's state of development. Both the theoretical and empirical results stress the importance of strong or at least strengthened institutions in the wake of natural resource discoveries as a way to curb the associated negative effects of corruption.

## **DEALING WITH NEGATIVE ENVIRONMENTAL AND SOCIAL EFFECTS OF EXTRACTIVE INDUSTRY ACTIVITIES**

19. Extractive industries activities, if poorly managed, can damage the environment and leave behind contaminated materials, which release pollutants for many years after the mines or enterprises have shut down. Local and international environmental groups have become increasingly involved in mining disputes. On the other hand, local communities have become increasingly concerned that they should shoulder all the negative impacts of mining but receive few of the benefits, especially as capital-intensive, large mining operations only generate a fraction of the jobs that they did a generation ago. Traditionally most research has focused on the microeconomic effects, determining the benefit or lack thereof to the mining sector's impact on the national economy. Little analytical research has been done on the microeconomic or regional effects that focus on socio-cultural, and especially environmental effects (McMahon et al 1997). There can be grave social and cultural repercussions to opening a new mine, particularly when indigenous populations are involved. May strain housing, and infrastructure, promote vices and overwhelm lifestyles of those who are not equipped to cope well with changes. Regulatory processes, and consultative processes followed in the opening of the mine as well as mediation methods for possible conflicts.

20. Social capital research has shown how natural resource rents can be a source of conflict, and policy failure, especially in the case of factional political states that are associated with heterogeneous societies (Easterly and Levine 1997). Comparative country case studies reveal how the mechanisms used to capture and transfer natural resource rents contribute to policy failure. Social and economic benefits do not come automatically to local communities from mining operations. Most successful cases have occurred where local community provided goods and services for mining operations. In some cases mining companies played an active role in developing suppliers. Sustainability is closely linked to the local participation of neighboring communities in the decisions affecting them. A key result of the study is that legal license is not adequate, companies must obtain a social license, and this depends upon consultation, participation, and, increasingly, a strong trilateral dialogue.

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## Annex D. Extractive Industries Issues in Country Assistance Strategies (CAS) and Country Assistance Evaluations (CAE) — A Brief Review

1. The main evaluative areas of the extractive industries evaluation study — *economic benefits and distribution, governance and transparency, and environmental and social safeguards* — often go beyond the scope of individual interventions in the extractive industries sector, being subject to the broader macroeconomic and institutional framework of a country. Thus, mobilization of economic benefits and their distribution would fall within the larger fiscal and public expenditure framework. Governance and transparency are tied to the broader institutional climate of the country. While this provides for environmental and social safeguards at the project level, their effectiveness is subject to wider policy and institutional arrangements.
2. On the other hand, Bank projects in the extractive industries sector are generally narrowly focused on specific sectoral needs — technical assistance, rehabilitation, production and sectoral policy/institutional reform — and closely related environmental and social issues. In general, they are not designed to directly address the larger evaluative areas, except in the context of the project, being subject to the economy-wide policy framework.
3. Therefore, a large portion of the answers to the main evaluative questions is to be sought from the Bank's interventions and performance in several policy areas/sectors that lie outside of the extractive industries sector. A starting point for this inquiry is the Bank's strategy for a country as laid out in the Country Assistance Strategy (CAS) document and its evaluation as in the Country Assistance Evaluation (CAE) document. A CAS typically lists and rates country and Bank priorities under different policy areas/sectors, and provides a rating of the country's performance under each of them. Relevant questions in respect of CASs and CAEs in this regard are:
  4. Are the analyses of issues *relevant* to the needs of the extractive industries sector?
    - Was the strategy devised by the Bank *relevant* to the issues that were identified?
    - Has the Bank pursued lending and non-lending activities commensurate with these strategies?
    - How efficacious has the Bank been in these interventions?
    - How sustainable are the results obtained in these areas?

For each of the above questions:

- Did the EI-dependent countries (High-EI countries) perform better than others (Low-EI countries) in each of the evaluative areas?
- With the High-EI countries, did the countries with interventions in extractive industries projects perform better than those that did not have any interventions in the extractive industries sector?

5. The relevant policy areas/sectors and the manner in which they correspond to the main evaluative areas is shown below:

MAIN EVALUATIVE AREA/QUESTION	BROAD POLICY AREA/SECTOR
Economic Benefits and Distribution	
Assisting countries to achieve an equitable distribution of public revenues from extractive industries development to central and local governments and local communities	Economic Policy; Poverty Reduction;
Assisting countries to effectively channel public revenues from extractive industries to support sustainable development.	Economic Policy; Poverty Reduction;
Institutions, Governance and Transparency	
Assisting clients to build institutional capacity for promoting greater transparency in clarifying property rights, public disclosure of benefits and their distribution.	Public Sector;
Improving the investment climate, streamlining the award of exploration and development rights and strengthening linkages with the rest of the economy.	Private sector;
Environment and Social Safeguards	
Assisting clients to promote environmentally and socially sustainable performance and mitigate negative environmental effects on local communities and indigenous peoples.	Environment/Social Development

6. The broad policy areas/sectors have many sub-sectors grouped under them, and an analysis of their ratings can give only a general idea. More details at the sub-sector level can be obtained from the country assistance strategy matrix of the CAS where for each relevant sub-sectors are listed — *the main issues, government strategy, the Bank's past lending and non-lending interventions, future lending and Bank performance*. Based on the findings from the CAS Strategy Matrix, a closer examination of the relevant sections of the CAS was done.

7. Next, all available CAEs were reviewed to examine the findings on country performance under each of the evaluative areas. The format of CAEs does not correspond completely with that of the CAS, and therefore relevant portions of CAE are reviewed to get an idea of the performance. All CASs and CAEs for the five-year period ending FY2002 were reviewed.

## Findings

8. The CASs and CAEs were divided into two broad groups — countries with a significant extractive industries sector (extractive industries exports greater than 15 percent of exports: EI-Dependent or “High-EI”) and others (Low-EI). The first group was further subdivided into those with Bank projects in the extractive industries sector (High-EI-Bank-Projects) and those with no Bank interventions in the extractive industries sector (High-EI-No-Bank-Projects).

### ***Rating of Country Priorities and Performance***

9. In the summary table on priorities and performance given in the CAS, country and Bank priorities are rated on a three-point scale of High, Medium and Low. Country performance is rated on a four-point scale of Excellent, Good, Fair and Poor. The ratings are summarized in terms of High-EI and Low-EI countries as follows:

**Table 1 Summary of Ratings of Country Performance, Country and Bank Priorities for Relevant Sectors/Areas of the Economy**

(Source: *Country Assistance Strategy (CAS) Documents*)

Importance of EI in country Economy	WBG Projects in Country?	Country Priority (H/M/L)					Bank Priority (H/M/L)					Country Performance (E/G/F/P)				
		Pov.	Eco. Policy	Env.	PSD	Energy & Mining	Pov.	Eco. Policy	Env.	PSD	Energy & Mining	Pov.	Eco. Policy	Env.	PSD	Energy & Mining
<b>High</b>	<b>Yes</b>	H	M	H	H	H	H	H	H	H	M	F	G	G	G	G
<b>High</b>	<b>No</b>	H	H	M	H	M	H	H	H	H	H	F	F	F	F	F
<b>Low</b>	<b>Yes</b>	H	H	M	H/MH/M		H	H	H/MH	H/M		F	G	F	F	F
<b>Low</b>	<b>No</b>	H/MH/M	M	H/MH/M			H	H/M	H/MH/MM			F	G	G	G/F	G/F

10. ***Country Priorities***: Country priority was generally relatively higher for all relevant sectors for High-EI countries as compared to Low-EI countries. Within High-EI countries, country priority for economic policy was *lower* for countries with Bank projects. For High-EI countries, country priority was higher for countries with Bank projects in respect of environment and energy & mining.

11. ***Bank priorities***: Bank priority was broadly the same for High-EI and Low-EI countries in respect of poverty reduction, economic policy, environmental and private sector development. Among High-EI countries, Bank priority was surprisingly lower for countries having EI Bank projects.

12. ***Country Performance: Poverty***: There was not much difference between High-EI and Low-EI countries, all being rated Fair on an average.

13. ***Economic Policy***: Low EI country performed marginally better, and within High-EI projects, those with EI Bank projects performed better.

14. ***Environment, Private Sector Development and Energy & Mining***: On the whole, High-EI and Low-EI projects performed similarly (Good/Fair), while within High-EI projects, those with EI Bank projects performed better.

### ***EI Issues in the CAS Strategy Matrix***

15. The CAS strategy matrix lists the key *issues, government strategy and Bank group program — past and present*, under each sector and sub-sectors. An analysis of CAS strategy matrices this information suggests that in High-EI-Bank-Project countries, issues related to the main evaluative areas and with particular reference to extractive industries are raised fairly consistently. This is exemplified by the CAS for Azerbaijan, where the issues raised

include management of windfall gains, reducing rent-seeking behavior, tackling corruption, and governance issues, and pursuing equitable development, while avoiding the “Dutch Disease.” In High-EI countries without Bank projects, also, the same sort of issues are raised but not as comprehensively. In Low-EI countries, there is greater variation in the extent to which these issues are raised even in a general manner (i.e. without specific reference to extractive industries).

16. About 64 percent of CASs for those for poorly performing EI-dependent countries recognized one or more issues related to the management of EI revenues. The issues that were mentioned spanned a wide range, including the management of volatility and exhaustibility of EI revenues (Azerbaijan, Mongolia), achieving macroeconomic stability (Gabon, Trinidad and Tobago), public expenditure policies for EI revenues (Bolivia, Chad), transparency in handling EI revenues (Kazakhstan, Papua New Guinea), diversification of economic activity (Nigeria, Zambia), and reduction of subsidies to the EI sectors (Russia).

17. In general, the mention of EI revenue issues in a CAS does not appear to translate readily into developmental interventions by the Bank. The dearth of follow-up interventions could be related to the relatively low level of Bank involvement in poorly performing EI-dependent countries. World Bank lending per capita over 1990–99 was significantly lower (at US\$47) for poorly performing EI-dependent countries, than for better performing EI-dependent countries (US\$80) or poorly performing non-EI-dependent countries (US\$61). While this is a consequence of the Bank’s country policy and institutional performance based allocation of IDA credits, there is no indication that the shortfall in lending has been mitigated by non-lending interventions such as economic and sector work, as would seem desirable in light of these countries’ needs.

18. *Government Strategy:* Generally speaking, for High-EI countries, government strategy does not cover all the issues that are raised even with respect to the extractive industries sector. The tendency is to focus one or a few specific issues, as for instance for Bolivia which seeks to implementing judicial reforms and modernizing the legal framework for the private sector and increasing transparency, whereas a greater variety of issues are identified that related to the extractive industries sector.

19. *Bank Past Lending/Non-Lending activities:* For High-EI countries, past Bank lending/non-lending activities directly related to extractive industries are generally narrower in scope compared to the extent of issues identified.

20. *Future Bank Lending:* Generally speaking, future Bank-lending as well and non-lending activities, as it may relate to extractive industries is narrower in scope compared to the extent of issues that are identified and the corresponding strategy.

21. *Bank Performance:* Among High-EI countries there is significant discussion on interventions directly related to the extractive industries sector. In case of poverty reduction, economic policy and private sector development, there is generally less specific discussion relating these issues to extractive industries.

Table 2. List of Countries for which CASs and CAEs (where available) were reviewed

EI-Dependent Countries		Other Countries	
<i>with</i> Bank EI Projects	<i>without</i> Bank EI Projects	<i>with</i> Bank EI Projects	<i>without</i> Bank EI Projects
Azerbaijan	Gabon	Albania	Belarus
Bolivia	Jamaica	Argentina	Bhutan
Cameroon	Jordan	Bangladesh	Bulgaria
Chile	Nigeria	Bosnia-Herzegovina	Burkina Faso
Colombia	South Africa	Brazil	Burundi
Ghana	Togo	Chad	Cambodia
Kazakhstan	Trinidad and Tobago		Costa Rica
Mongolia	Turkmenistan		Cote d'Ivoire
Papua New Guinea	Vietnam		Croatia
Russian Federation	Yemen		Djibouti
Tanzania			Dominican Republic
Ukraine			Egypt
Zambia			Gambia
			Honduras
			Indonesia
			Kenya
			Lao PDR
			Lithuania
			Macedonia
			Malawi
			Malaysia
			Maldives
			Moldova
			Mozambique
			Nepal
			Nicaragua
			Panama
			Philippines
			Romania
			Rwanda
			Slovak Republic
			Slovenia
			Tajikistan
			Uruguay