Report No. 38044-PE

Republic of Peru
Wealth and Sustainability: The Environmental and Social Dimensions of the Mining Sector in Peru

May, 2005

Environmentally and Socially Sustainable Development Department
Latin America and the Caribbean Region

Document of the World Bank

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ACRONYMS

AAA	Analytical Advisory Activity
BCR	Central Reserve Bank of Peru
BGR	Federal Institute for Geoscience and Natural Resources
BLM	Bureau of Land Management
IDB	Inter-American Development Bank
CAF	Andean Development Corporation
CAREC	Central American Credit for Renewable Energy, Efficient Energy and Cleaner Production (Crédito centroamericana para energía renovable, eficiencia energética y producción más limpia)
CAS	Country Assistance Strategy
CAO	Dialogue and Consensus Table of Cajamarca (Mesa de Diálogo y Consenso)
CIDA	Canadian International Development Agency
CMLR	Centre for Mined Land Rehabilitation
CND	National Decentralization Council
CNDH	National Coordinator for Human Rights
CONAM	National Environment Council (Consejo Nacional del Ambiente)
CONAMA	National Environmental Commission of Chile (Comisión Nacional del Medio Ambiente de Chile)
CONACAMI	National Coordinator of Peruvian Communities Affected by Mining (Coordinadora Nacional de Comunidades del Perú Afectada por la Minería)
DAC	Annual Consolidation Declaration
DFID	Department for International Development
DGAA	General Directorate for Environmental Affairs
DGM	General Directorate of Mining
DGPM	General Directorate of Multi-annual Public Sector Programming (Dirección General de Programación Multianual del Sector Público)
DIGESA	General Directorate of Environmental Health, Ministry of Health (Ministerio de Salud, Dirección General de Salud Ambiental)
DREM	Regional Mining and Energy Directorates
D.S.	Supreme Decree
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIR	Extractive Industries Review
EMP	Environmental Management Plan
EMS	Environmental Management systems
EMTAL	Energy and Mining Technical Assistance Project
EPA	Environmental Protection Agency
EPA	Environmental Legacy Elimination Project (Proyecto de Eliminación de Pasivos Ambientales)
EVAP	Preliminary Environmental Evaluation (Evaluación Ambiental Preliminar)
EVAT	Regional Environmental Evaluation (Evaluación Ambiental Territorial)
FAO	Food and Agriculture Organization
FDDH	Defense and Development Front of Huarmey (Frente de Defensa y Desarrollo de Huarmey)

FIDE	Inter-governmental Decentralization Fund
FONAM	National Environment Fund (Fondo Nacional del Ambiente)
FONCOMUN	Municipality Compensation Fund (Fondo de Compensación Municipal)
GEF	Global Environmental Facility
GOP	Government of Peru
GDP	Gross Domestic Product
GNI	Gross National Income
HC	Hydrocarbon
IAIA	International Association for Impact Assessment
IACHR	Inter-American Court for Human Rights
IBRD	International Bank for Reconstruction and Development
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IGV	General sales tax
INACC	Mining Public Registry (Instituto Nacional de Conseciones y Catastro Minero)
INEI	National Institute of Statistics
INGEMMET	Mining and Metallurgy Geological Institute
INRENA	National Institute for Natural Resources (Instituto Nacional de Recursos Naturales)
ISC	Selective Excise Tax (Impuesto Selectivo al Consumo)
LMP	Labor/Management Program
MDG	Millennium Development Goals
MEF	Ministry of Economy and Finance
MEL	mining environmental legacy
MEM	Ministry of Energy and Mines
MEND	Mine Environment Neutral Drainage Program
MIGA	Multilateral Investment Guarantee Agency
MMSD	Mining, Minerals and Sustainable Development
MPL	maximum permissible levels
MSSD	Mining, Minerals and Sustainable Development Report
NGO	Nongovernmental Organization
OIP	Office of Investments Programming
ONREN	National Office of Evaluation of Natural Resources
PAMA	Environmental Management and Adaptation Plan(s) (Programas de Adecuación y Manejo Ambiental)
PCM	Presidency of the Council of Ministers Presidencia del Consejo de Ministros
PDS	Social Development Program
PEMA	Special Program for Environmental Management
PERCAN	Peru-Canada Project
PRODES	Association for the Promotion of Development
PROFONAMPE	National Fund for Natural Areas Protected by the State (Fondo Nacional para Áreas Naturales Protegidas por el Estado)
SEIA	National System for Environmental Impact
SEMARNAT	Secretariat for Environment and Natural Resources

SENCICO	National Department for Construction Industry Standards, Training and Research (El Servicio Nacional de Normalización, Capacitación e Investigación para la Industria de la Construcción)
SIA	Social Impact Assessment
SIAF	Integrated Financial Administration System
SME	Small and medium-sized enterprise
SMI	Sustainable Minerals Institute
SNGA	National Environmental Management System
SNIP	National System of Public Investment
SNMPE	National Society of Mining, Petroleum, and Energy (Sociedad Nacional de Minería, Petróleo y Energía)
SPCC	Southern Peru Copper Corporation
SPDA	Peruvian Environmental Law Society (Sociedad Peruana de Derecho Ambiental)
SUNAT	Office of the National Superintendent of Taxes (Tax Authorities) Superintendencia Nacional de Administración Tributaria
WBG	World Bank Group
WHO	World Health Organization

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Acknowledgements

This report was prepared by a team composed of Renan Poveda (Team Leader), Alonso Zarzar, Leo Maraboli, Rossana Polastri, Laura Berman, Xanthe Scharff, Marco Ortiz, and Maribel Cherres. This work could not have been done without the knowledge, experience and specialized skills of key local consultants including: Antonio Bernales, Carlos Casas, Raúl Farfán, Meliton Carvajal, Jorge Recharte and his team, Adriana Delgado, Inés Olivera, Jaime Soldi, Eduardo Loret de Mola, Juan Hoyos and Felix Remy. In addition, the team wishes to thank World Bank colleagues for their valuable comments and contributions. They include: Marcelo Giugale, María Donoso Clark, Abel Mejía, John Redwood, Peter Van Der Veen, Robert Schneider, Vicente Fretes, Clive Armstrong, Kent Lupberger, Ernesto Sánchez-Triana, Oscar Avalle, Eleodoro Mayorga-Alba, John Newman, Charles Di Leva, Asimina Papapanou, Karsten Fuelster, John Middleton, Harvey Van Veldhuizen, Anita Bhatia, Javier Aguilar and Paul-André Rochon. The team was able to produce this report thanks to the unconditional support and collaboration of the team at the Peruvian Ministry of Energy and Mines (MEM). The authors express their sincere appreciation to María Chappuis for her time, dedication and unlimited support, as well as to Jaime Quijandria, César Polo, and the staff at MEM who contributed to the production of this report. In addition, the team expresses its gratitude to the members of the Federal Institute for Geoscience and Natural Resources in Germany (BGR), the Peru-Canada (PERCAN) Project, the National Society of Mining, Petroleum and Energy (SNMPE), and the Compliance Advisory Ombudsman (CAO) for Cajamarca, and for sharing their knowledge and experience of the mining sector in Peru. The team would also like to thank Jonathan Cavanagh for editing this work.

EXECUTIVE SUMMARY

Peru is the world's second largest producer of silver, third largest producer of zinc, fourth largest producer of lead, fifth largest copper producer, and the sixth largest producer of gold. Richly endowed with other natural resources as well (including natural gas, fisheries and timber), Peru is nevertheless, a poor country. The mining sector is thus characterized by mistrust among its key stakeholders and is prone to social conflicts.

The mining industry, in that context, both raises and dashes hopes. Macroeconomically, it is extremely important, accounting for 57 percent of all Peru's exports and 6.6 percent of Gross Domestic Product in 2003.[1] Since 1992, it has attracted over US$10 billion in domestic and international investment. Between 2001 and 2003, mining accounted for 37 percent of total foreign investment in Peru. It contributed 4.5 percent of government tax revenues in 2003, and, despite being a capital-intensive industry, employs over 70,000 people directly and 350,000 people indirectly, many of them in Peru's poorest rural areas. Above all, fueled by privatization and other reforms since the early 1990s, it is a fast-growing sector. Over the past ten years, while GDP growth has averaged 4 percent a year, that of the mining sector has averaged 10 percent. A series of major new projects are expected to power further growth, averaging 6.6 percent in 2005-2007.

The expectations fired by these developments are dashed by environmental damage, on the one hand, and by limitations in the use and distribution of the proceeds of mining, on the other. Both are exacerbating social conflicts, to a point that could deter investors or delay new projects.

It is against that backdrop that this report analyzes the current major environmental and social issues associated with the mining sector. It does not deal with geological prospects, investor concerns, or with wider philosophical issues of social justice; preferring to examine the technical aspects of environmental impacts and the rational use of mining proceeds. In so doing, it looks at the existing policy and institutional frameworks as they contribute to current constraints, and at strategic options for better management of key environmental and social challenges based on international experience and best practices.

The purpose of this report is to provide the Government of Peru (GOP) with technical analysis and a framework for making choices that could help improve its capacity to address the environmental and social impacts of mining operations. The study is based on a review of the literature, field studies and consultations with key stakeholders aimed at determining the key environmental and social issues facing the mining sector. Their perceptions helped define the scope and structure of this report and resulted in its

[1] Sociedad Nacional de Minería Petróleo y Energía (SNMPE). *Reporte estadístico minero energético. Segundo Trimestre 2004*. [Ministry of Energy and Mines Statistics Report. Second quarter 2004]. Further footnotes substantiating statements made in this Executive Summary are to be found in the body of the text.

focusing, with the GOP's agreement, on four interrelated priority areas: the ongoing damaging impacts of past mining and smelting operations, known as mining environmental legacies or MELs (Chapter 2); the environmental governance framework (Chapter 3); the capacity and framework to address social issues triggered by mining operations (Chapter 4); and transparency and rationality in the allocation of resources generated by mining (Chapter 5).

Preliminary consultations with the private sector (National Society of Mining, Petroleum and Energy, SNMPE), public sector, civil society representatives and international experts from a wide range of agencies (World Bank, IFC, MIGA, CAF, and the IDB) corroborate that the above-mentioned issues were the areas where this study could make the greatest contribution to elucidating the social and environmental concerns faced by the mining sector in Peru and that the focus should be on large and medium-scale mining operations (mainly because smaller and artisinal mining operations are the subject of other studies and projects).

The Peruvian government has taken concrete steps to address some of these issues, including: (i) establishing an institutional framework to harmonize environmental legislation and institutional responsibilities; (ii) developing a body of sector-based environmental legislation, including a set of command and control instruments for mining activities such as environmental impact assessments and environmental adaptation and management plans (PAMA); (iii) setting ambient standards for water, air and solid waste; (iv) compiling an inventory of mining environmental legacies; (v) creating a framework for engaging in dialogue with affected communities; (vi) promoting transparency regarding the distribution of mining proceeds to the regions and local governments; (vii) forming sector-based environmental management units; and (viii) instituting reforms to create a more attractive investment climate. Progress is also discernible in the private sector, as demonstrated by the number of approved PAMA to bring them into compliance with legislation.

Despite this notable progress, only implemented since 1993, the GOP continues to face a number of challenges: (a) addressing past environmental legacies from mining operations; (ii) monitoring, regulating and penalizing mining activities polluting in excess of permissible levels; (iii) guaranteeing that new mining operations will adhere to environmental and socially accepted international standards throughout their lifecycle; (iv) addressing social issues, including a growing lack of trust by communities toward mining operations; (v) promoting transparency at a local level regarding the management and use of mining proceeds; and (vi) financing activities that would address priority environmental and social issues related to mining.

These limitations are compounded by: (i) lack of public awareness and understanding of environmental issues associated with mining operations; (ii) lack of baseline data for measuring environmental quality and risks from environmental legacies; (iii) the widely held view that environmental quality and economic growth objectives are incompatible; (iv) a weak institutional framework, including the absence of an independent central

environmental authority with enforcement capability; and (v) limited financial and human resource capacity in the sectoral environmental unit within the Ministry of Energy and Mines (MEM) to efficiently carry out its responsibilities.

By addressing the above-mentioned issues, this report seeks to ensure that Peru's rapidly expanding mining sector contributes to sustainable development. It is, furthermore, consistent with the World Bank's Country Assistance Strategy Progress Report for Peru (CAS, August 2004) since it provides the government with strategic options to address social and environmental issues associated with the mining sector and thus promote reforms and competitiveness, and reduce investor risk. The timing of this work is appropriate since: (i) it responds to a request made by GOP at a time when it has the willingness and commitment to improve and reform environmental and social policies in the mining sector and to address conflicts; (ii) it is the first in-depth study in a mining country following the Extractive Industries Review, which concludes that the World Bank Group needs to stay engaged in mining countries like Peru and help address environmental and social issues; and (iii) the policy options set forth in this study can already be tested and applied to new mining activities such as Las Bambas, so that potential conflicts are identified and addressed early on.

Main Conclusions

Mining Environmental Legacies

The ongoing damaging impacts of past mining and smelting operations (mining environmental legacies, MELs), scattered over vast tracts of the Peruvian territory, pose a serious health problem and are a major social irritant in local communities. Poor tailings containment and inadequate methods of disposing of the large volumes of hazardous materials and pollutants involved in mining operations have already led to widespread seepage, acid drainage, and water pollution, as well as other negative impacts on biodiversity and ecosystems. For example, some of the mining and metallurgical activities along the Rimac River pose the risk, along with other sources, including agriculture, of polluting the drinking water sources that supply the Lima metropolitan region, inhabited by over seven million people or approximately one third of the Peruvian population. Other river basins hit by mining-induced pollution include the Mantaro, Pisco, Madre de Dios, Llaucano and Santa. Already grave, the dangers of contamination are compounded by the fact that Peru is prone to seismic tremors and earthquakes.

The economic impacts through, for instance, the loss or damage of productive land and the loss or degradation of water resources, have also made the public increasingly aware of the adverse effects of past and present mining and smelting operations, exacerbating community opposition to current and new projects and creating potential sources of conflict.

The government's efforts to address the MELs got underway in the mid-1990s. Since, the main issues to be addressed include: (i) locating and classifying unattended mining legacies (whether orphan sites or those with an identifiable concessionaire); (ii)

determining how to make them safe (remediation); (iii) identifying who is/was responsible for remediation (including the Government); and (iv) assessing how to finance the remediation. In tacking those technical, legal, and financial issues, the government was at the same time laying the foundations for a comprehensive framework of laws, regulations, and incentives to govern the numerous, and in some cases major, new mining projects in Peru.

From 2001 to June 2003, the *Environmental Legacies Elimination Project* (*Proyecto de Eliminación de Pasivos Ambientales*-EPA) sought to: (i) produce a diagnostic assessment of the environmental impacts of each mining legacy; (ii) draw up a detailed national inventory, identifying each legacy with its geographic location, key environmental risks, legal status, and physical characteristics; (iii) identify and develop technologies for environmental rehabilitation; (iv) carry out studies and works to remediate and rehabilitate the areas affected by environmental legacies; (v) take preventive measures to avoid the generation of acid drainage from mining operations, clearing and leveling of abandoned tailings; (vi) reduce the risk of cracks or leaks in abandoned tailings; and (vii) reduce, neutralize and/or eliminate the negative effects of environmental legacies on public health, flora and fauna, and economic activities in the surrounding areas, by, among other things, restoring and enhancing water, land and air quality through a series of actions, including reforestation.

This project helped produce a preliminary inventory of 610 MELS, 72 percent of which were found to be legitimate mining concessions with identifiable owners/operators. The EPA also came up with a rough-and-ready cost estimate for the rehabilitation of environmental legacies in Peru of US$200-250 million which remains questionable, not counting the (considerable) MELs in state-owned enterprises, such as Centromin.

Parallel to the government's efforts, both the mining industry and NGOs are becoming more sensitive to environmental issues. While the National Society for Mining, Oil, and Energy has produced a voluntary code of environmental ethics and entered into environmental conservation and social development contracts with regional governments, a non-profit group called *Avancemos Juntos*, composed of prominent mining businessmen, ex-government officials, and civil society and NGO representatives, was formed in May 2004 to offset some of the technical capacity limitations in the Ministry of Energy and Mines (MEM) and some mining companies to address MELs. It could eventually evolve into a center of technical expertise for addressing environmental legacies. Bilateral cooperation projects such as the Peruvian-German Mining and Environment Project, part-sponsored by Germany's Federal Institute for Geosciences and Natural Resources-BGR, could be also a promising source of professionals qualified in environmental management.

However, it is in the legal sphere that most progress has been achieved in the past two years, with the law governing mine closure (*Ley 28090*) and the Law for Environmental Legacies of Mining Activities (*Ley 28271*). The objectives pursued by the latter are comprehensive and seek to regulate: (i) the identification process for environmental legacies stemming from mining activities; (ii) responsibility for the remediation and rehabilitation of areas affected by environmental legacies; (iii) establishment of a

financing mechanism; and (iv) mitigation of the negative impacts of MELs on the population's health, the surrounding ecosystem, and properties. Despite its clear intent, however, the law leaves a number of potential loopholes that might allow mining companies to evade their responsibility for the remediation of MELs by transferring the liability to the state. The law appears not to be coordinated with the targets and timetables of the Mining Reference Plan for 2000-2009. Some definitions in the law – what constitutes an "abandoned" or "inactive" site, for instance, -- need to be tightened to preclude misinterpretation and evasion.

Under the MEL law, concession holders responsible for environmental legacies will sign contracts for rehabilitation and remediation with the MEM through the General Directorate of Environmental Affairs (*Dirección General de Asuntos Ambientales*-DGAA). Those found responsible for environmental legacies will have to prepare studies and carry out works to control, mitigate and eliminate, in whatever way is possible, the risks and negative effects of the legacy, according to their remediation contract. The studies would be based on the maximum permissible levels (MPLs) as benchmarks, and enterprises would have to present their plan within no more than one year (to be completed in no more than 3 years), according to the Guidelines approved by the DGAA.

However, one of the flaws in the law is that it opens up the opportunity for mining companies to unilaterally rescind their concessions and waive the mining right, shifting all the daunting burden and obligation of remediation and rehabilitation to the government. Consequently, the law would be undermining the "the polluter pays" principle. This runs counter to current environmental legislation and the licensing process for mining operations, which oblige all holders of valid mining titles and concessions to comply with environmental standards and rules for mines. Hence, the MEM is currently in the process of submitting an amendment to the law which will limit potential loopholes. One of the weaknesses in enforcing any law, however, is that the government has not assumed its own responsibility for addressing multiple MELs produced by state-owned mining companies. No thorough study has even been done of these state-owned MELs.

As for financing remediation, Article 9 of the MELs Law assigns the mandate for fundraising and financing for the remediation and rehabilitation of legacies to the National Environmental Fund (*Fondo Nacional del Ambiente*- FONAM). According to the Law, resources for financing the remediation and rehabilitation of environmental legacies should come from international financial cooperation arrangements, debt swaps, and other sources, provided that public funds are not used and the national budget is not affected (in spite of a recent contribution of US$ one million by the MEM, and verbal commitment by three mining companies to contribute to FONAM's endowment fund). There are two issues to be resolved in this approach: (i) FONAM has no technical or fund-raising experience in this field and would need to team up with partners of proven technical excellence and receive training; and (ii) there is no broad base of international financial mechanisms available for a systematic rehabilitation program, as mining environmental legacies are ranked low in worldwide public awareness (compared with biodiversity and air pollution concerns, for instance). In addition, the idea that foreign donors ought to come to the rescue with donations and contributions to solve the orphan

legacies problem while the state is refusing any significant corresponding financial commitment from one of the economically strongest sectors, would be very hard to sell. The state needs to demonstrate that MELs represent a priority and that resources will be destined to address this critical issue.

One policy option under consideration is that operators put up a financial surety as part of a Mine Closure Plan to be incorporated in the initial Environmental Impact Assessment needed for the operating license. However, the Mine Closure Plan Regulation was still under evaluation by MEM as this report went to press.

Chapter 2 also examines lessons learnt in other countries, such as reunified Germany, and best practices in Bolivian mine closure legislation, US Bureau of Land Management Strategies, and the World Bank's Safeguards Policies as instruments to avoid environmental legacies. It concludes that the remediation and rehabilitation process can help create jobs in areas where mining activities have stopped, and can also help develop a profitable industry specializing in remediation efforts. Therefore, local, regional, and national levels of government (including numerous agencies, such as DIGESA, CONAM, INRENA, MEF) should be involved and committed in order to successfully undertake the task of rehabilitating MELs.

Once the remediation and rehabilitation of MELs have been established as a national priority and resources allocated to them, key elements in a strategy for addressing MELs should include: (i) enhancing and updating the current inventory by identifying and prioritizing the most critical MELs (based on health risk criteria), and determining the health, environmental and social costs, as well as the associated remediation costs, and each MEL's legal status; (ii) developing a monitoring program to determine if there are chemical leaks; (iii) establishing center(s) of excellence for guaranteeing technical guidance and capacity building; (iv) engaging the state in the remediation of MELs from state-owned mining operations (setting an example of commitment to MEL remediation); (v) conducting an awareness campaign (within government, regions and municipalities) on the risks of MELs; (vi) creating a MEL rehabilitation fund; and (vii) enhancing the capacity of FONAM to manage the fund for MEL remediation.

Environmental Governance

While Chapter 2 focused on MELs and the legal and regulatory arrangements needed for remediation, Chapter 3 looks at the broader environmental and social policies and capacities needed to ensure that mining activities are carried out in an environmentally sound and socially responsible manner. That whole framework is referred to in this report as "environmental governance." Within it, the licensing process plays a key role in ensuring that new mining operations will abide by environmental standards, coupled with legal mechanisms (such as audits and Environmental Management and Adaptation Plans or PAMA, introduced in 1993) that enable the MEM to monitor mining activities and penalize companies that do not meet those standards.

These developments are major improvements compared to the times prior to the policy and institutional reforms of the 1990's, when most of the mining companies in Peru operated under the assumption that their contribution to the country and society would be limited to: (i) the development of the local economy through job creation, construction of basic infrastructure, enhancement of local markets (particularly in poor and remote areas); and (ii) fiscal contributions through taxation and payments for concessions. Very few companies addressed environmental issues (and those that did, managed to do so in a very limited manner) during and before the eighties. The regulatory framework prior to the 1990's did not include any mechanisms that would require companies to comply with environmental or social standards or with the remediation/compensation of environmental degradation. Even foreign mining companies known to be rigorous in ensuring an adequate environmental and social performance in their countries of origin often failed to be proactive in taking specific measures that could ensure improved environmental compliance.

During the 1990s, the World Bank assisted the Government of Peru in its efforts to: (a) establish enabling conditions to attract mineral investments; (b) reform the role of the government from that of owner to regulator; and (c) shift the responsibilities for operational activities to the private sector through the implementation of first generation reforms of the mining sector carried out under the Bank-financed Energy and Mining Technical Assistance Project (EMTAL). This project, initiated in 1993, is credited with catalyzing many key regulatory and institutional changes that promoted sustainable practices in the mining sector. Its objectives included: formulation, communication and enforcement of environmental policy and regulations for mining, hydrocarbon and energy related activities; strengthening of the General Directorate of Environmental Affairs (DGAA); and carrying out sector studies, environmental evaluations and the development of an information system for mining.

The implementation of EMTAL reflected the Peruvian Government's need and determination to address the sector crisis faced at that time (which included the paralysis of mining activities in rural areas due to terrorism, the collapse of the state-owned mining operations, and the decline of investment in public enterprises due their costly and inefficient operational structure). EMTAL also helped shift sector policy toward a strategic vision for the mining sector. The changes produced by the new regulations fostering private investment paved the way for today's large- scale mining projects.

That said, and despite both the improvement in the MEM's environmental management capacity and a plethora of institutions created over the past dozen years, such as the National Environmental Council (CONAM), the National Institute for Natural Resources (INRENA), and the General Directorate of Environmental Health (DIGESA) under the ministry of health, this study concludes that the political will to resolve a perceived contradiction between promotion and regulation of the mining industry is still too weak. The MEM still has to establish itself as a credible, efficient and neutral reviewer and approver of environmental impact assessments and licenses.

The current institutional structure for environmental management in Peru could be further improved, for instance, by a strengthened central environmental agency that would share the burden and responsibility of the licensing and enforcement process (and in turn, ensure legitimacy and enhance capacity). This would reduce the possible conflict of interest between an agency which has both the mandate to regulate and promote the activity. In addition, the key instruments for environmental management need to be revised, updated, and the overall institutional capacity for its application enhanced.

The report concludes that the Environmental Impact Assessment (EIA) process, which has a number of limitations, could be strengthened by: (i) requiring that the guide for the elaboration of EIAs ("the guide") becomes binding by law; (ii) updating the contents of the guide with internationally accepted standards; (iii) preparing detailed terms of reference (currently not required by law) for EIA elaboration on complex projects; (iv) sharing the responsibility of the licensing process with other governmental agencies; (v) establishing a decision-making panel (with key agencies) for the approval of the environmental license to operate (currently depending on one unit within MEM); (vi) integrating the EIA with an social impact assessment; and (vii) modifying the public audience stage of the EIA process, which currently has several shortcomings, and converting it into an impartially moderated hearing with limited and legitimate participants.

In addition, the study concludes that the environmental performance of mining companies which have concluded (or are in their way to fulfilling) their the Environmental Adaptation Management Plans (PAMA) could be enhanced by: (i) updating and enhancing the standards and criteria on emissions; (ii) requiring that mining companies adhere to stricter and internationally recognized standards; and (iii) promoting environmental management systems and environmental certification schemes (i.e. ISO-14000) that would develop voluntary compliance by mining industries. The report also recommends that commercial banks and financial agencies apply environmental and social criteria before granting financial assistance to mining operations. Likewise, the auditing and enforcement system will require enhanced capacity and an internal reorganization, in order to process environmental enforcement more efficiently.

Capacity to Address Social Issues

Chapter 4 is almost equally divided into an analysis of the causes of socially conflictive issues that are currently being played out in at least 16 mining sites in Peru and recommendations for enhancing the capacity and framework for addressing them.

Mistrust among all stakeholders is the common denominator, making dialogue a disproportionately difficult challenge; and it clearly has deep historical roots. In Peru, mining on a larger scale began just after the conquest and once the looting of Inca treasures was exhausted. The search for gold and silver was the obsession of the Spanish conquistadors and the colonial administration had, as its main economic activity, the extraction of these metals. For this purpose, the *mita* or compulsory work in the mines was established for the Andean people, resulting in one of the most exploitative and

inhumane treatments of the indigenous peoples in colonial times. As Andean folklore, mythology, and poetry show, resentment still runs deep.

At the same time, contemporary mining is often developed in extremely poor rural areas, characterized by economic stagnation, lack of employment opportunities, and weak, underdeveloped social capital. Thus, the local communities have interacted with the mines in order to earn cash income, despite their negative perception.

Much of the ongoing ambivalence in local stakeholders' feelings about contemporary mining has to do with lack of knowledge. The mining industry has generally done little to understand the surroundings and social and cultural aspects of the local communities and the government has also done almost nothing to provide the industry with the required information about their way of life. Finally, several communities and a number of social and environmental NGOs have assumed a confrontational attitude toward the industry and the central government.

In this context, where social expectations are usually high regarding large-scale investments and negotiating capacities are rather low, the lack of a more proactive role on the part of the Ministry of Energy and Mines has further increased the communities' perception of not being recognized as social actors.

Apart from the MELs and weak environmental governance analyzed in Chapters 2 and 3, Chapter 4 identifies and discusses the following most common social issues in the formal medium and large-scale mining ventures this report focuses on. Occurring in varying degrees depending, in part, on whether the region concerned is an area of old mining activities, recent mining developments, or a new area without previous mining, these issues are:

a) Unfulfilled expectations for employment and benefits;
b) Land acquisition and resettlement impacts;
c) Lack of adequate communication among companies, communities and the government in the licensing process;
d) Increase in prostitution and violence;
e) Weak enforcement of regulations or even absence of the government;
f) Lack of local capacity for negotiating and management; and
g) The perception of mining as a polluting activity that particularly affects water resources produces emissions that contaminate the air and adversely affects public health.

The report concludes that all stakeholders' current capacity to address these social issues is very limited. Until recently, community, industry and government did not actively engage in trilateral discussions for addressing some of the common issues. This lack of communication among stakeholders has aggravated or provoked conflicts during the various stages of the mining cycle. In addition, mining operations have often created high prospect of jobs and growth for the regions that in many cases have not materialized. Furthermore, lack of local capacity for negotiation and management has left communities

exposed and vulnerable. Mistrust of the state's capacity to efficiently enforce regulations and penalize industry is a common perceived notion among community members. Land acquisition and resettlement process are also complex and particularly conflictive. Rather than viewing mining as an opportunity for local development, many communities perceive mining as a polluting activity that affects water courses, produces emissions that contaminate the air and has adverse effects on public health without economic benefits for them.

Based on international experience, the report presents options that can be taken by industry, government and communities to prevent potential conflict including: (i) promoting and improving dialogue and an early consultation process among stakeholders (even prior to the exploration phase) (ii) establishing from the outset what mining companies can (and cannot) commit to; (iii) developing a communications strategy to disseminate the benefits from mining operations, including investments made in a specific locality by mining company; (iv) formalizing the process by which operators will enter into agreements for local employment and the benefits the mining company will provide to the local affected stakeholders throughout the various phases of mining process; and (v) developing specific guidelines on land acquisition and resettlement process. In addition: (vi) the MEM should continue to expand its role as a provider of information and prepare guidelines for industry on how to address the most critical social issues, including legal advice on the rights of citizens and communities; and (vii) the GOP should consider the possibility of establishing a sector ombudsman, who would help mediate conflicts if the parties voluntarily accept his or her services.

Building capacity at the local level in order to contribute and participate in the mining project cycle, as well as being able to negotiate and engage in constructive relations with mining companies, is an essential step for community integration with mining development. On a project-by-project basis, the government, in partnership with the respective mining operators, should assess the specific needs for capacity building and then develop a process of supporting training activities for local stakeholders.

This report supports a suggestion that the MEM should consider developing pilot cases to introduce changes in the licensing process with new large projects that are expected to begin investment in the short run. These pilots would provide a space to implement both environmentally and socially best practices, taking into account World Bank social safeguards applicable to the mining sector, in particular Operational Policy (OP) 4.12 on Involuntary Resettlement (revised April 2004) and Operational Directive (OD) 4.20 on Indigenous Peoples (September 1991). In order to create such a space, the MEM should work in partnership with the mining operators and with the participation of interested NGOs. The pilots should apply the best practices found in the mining and hydrocarbon sectors for implementing consultation, managing impacts, acquiring land, establishing agreements, reaching consensus on the types of benefits, and creating local capacity to generate business partnerships and local services for the mine. Successful pilots that can implement participatory monitoring and are properly audited would be the most effective way to achieve a demonstration effect and lead to a more balanced view of the mining

sector. It is also an appropriate way to help create a more favorable social environment for attracting new investments in the mining sector.

Fiscal Transparency and Revenue Distribution

A leitmotif of this report is the stark dichotomy between the mining sector's outstanding growth and prospects and the intractably antagonistic relations of its stakeholders.

To take the first, the Peruvian mining sector reform of the early 1990s attracted substantial exploration and a subsequent increase in mineral production and exports. While global exploration investment went up 90 percent and grew fourfold in Latin America, between 1990 and 1997 in Peru it grew twenty-fold. Due to drastically lower metal commodity prices starting in 1997, the share of exploration investment of most developing countries was reduced substantially since most international mining companies retreated to their traditional exploration areas. Yet Peru was able to keep its share of the total. This increased investment during the 1990s doubled Peru's mineral output and revenue from its mineral exports. Projections for 2005-2007 suggest that the sector could grow at an average rate of 6.6 percent, fuelled mainly by the initial operations of the Alto Chicama project, the extension of Carachugo and the Cerro Negro development by Yanacocha, South America's biggest goldmine. New copper projects are also expected to emerge like Cerro Corona of Gold Fields, an extension of Cerro Verde (primary sulfur project) and new zinc projects, like Cerro Lindo, San Gregorio de Milpo and Brocal.

As for the antagonism, much of it is fuelled by the sheer magnitude of economic contrasts and deeply-rooted social resentment. The largely foreign-owned Yanacocha mining company, for instance, generated exports worth over US$1 billion dollars in 2003, less than a decade after it began producing in the poverty-stricken department of Cajamarca, ironically the same area in which the Spanish looted the Inca Atahualpa of a roomful of a gold and silver ransom and then executed him. Yanacocha reportedly recovered its initial investment in less than two years. In contrast, this study's statistical findings show that tax receipts from the entire mining sector in Peru were approximately equivalent to US$300mn in 2003. Through the different redistribution mechanisms discussed in Chapter 5, a little over half that may find its way back to the regions. To cite another stark contrast thrown up by this report, with just US$200-250 million all Peru's major mining environmental sores (MELs), excluding those for which State mines are or were responsible, could be rehabilitated.

Transparent disclosure of which companies are taxed what and how those proceeds are used by the state (fiscal transparency) may not be enough to overcome historically deep-seated mistrust, but it is surely the only way to trim and manage it. In fact, as this report illustrates, mining enterprises are among the most regulated and transparent industries in Peru. Almost all are listed on the Peruvian and/or international stock markets and their annual reports are therefore audited and published. Some companies are also among the highest taxpayers in the country, however, many of the large mining enterprises have

signed with GOP stability agreements which allows them to have high tax breaks, reducing significantly the percentage of resources collected by the state.

The GOP (through MEM and MEF) has made significant progress in promoting fiscal transparency by working out the mechanics of fiscal instruments for collecting mining resources and information regarding the transfers of mining proceeds by the GOP to regions and municipalities affected by mining activities, particularly with regard to the *canon minero*, which is set at 50 percent of the income tax paid by the mining companies. In spite of this progress, there are still some areas which would benefit from additional interventions to ensure that the capacity is in place to further promote fiscal transparency. The study has concluded that the following areas still require attention: (i) financial disclosure regarding the local management of resources once the mining canon has been disbursed to regions and municipalities; (ii) building capacity at a regional and local level to run an effective accounting system, and ability to finance and monitor projects; (iii) disclosure of revenue source and destination by all stakeholders involved (including civil society and NGOs); and (iv) improving mechanisms for channeling mine proceeds so that they effectively address the environmental and social issues created by mining operations.

The MEF and MEM publish through their respective internet sites the amount to be distributed to regions and municipalities and the formula used to calculate the canon. However, this information is often not accessible to (or understood by) rural communities affected by mining activities since many lack electricity and access to the internet. Thus, the dissemination strategy should take into account the most suitable alternative methods for communicating complex information to those that use it and require it. Recent debates in Congress about the approval of the Mining Royalty Law have brought to light further concerns among various stakeholders about the effectiveness and transparency of the decentralized distribution of funds. These issues can be promoted through the Extractive Industry Transparency Initiative (EITI).

Conflicts in the Peruvian mining sector are not, however, solely the product of disclosure, information, and transparency shortcomings. As this study shows, they are also the product of indecision with respect to the delicate balance between the tax regime's twin objectives: to increase tax collection and to regulate the behavior of taxpayers. In the first case, the government looks for the balance between its tax collection needs and the establishment of a positive system that seeks efficiency and equity and encourages foreign and national investment. In the second case, the government seeks to give guidelines so that the taxpayer can maintain policies that are consistent with the conservation of the environment and corporate social responsibility. Internationally, to achieve these goals different taxation tools are used, such as the offer of tax incentives to offset the cost of actions that contribute to environmental conservation. Tax penalties are also used to discourage practices that negatively affect the environment.

In the case of Peru this rationality is not operating effectively, in part, because of the intense competition with Latin American neighbors to attract foreign investment in the mining sector. Establishing attractive tax structures in order to obtain mining investments

(domestic and foreign) is deemed essential. These attractive tax structures are often characterized by a lack of environmental and social norms, since state intervention through mining sector regulation is considered to discourage private investment through competitiveness losses. However, it is usually a lack of clarity and stability in the rules of the game (fiscal tax structure and licensing regulations) that are the real culprits that discourage mining investments. Hence, this study concludes that the GOP should ensure predictable costs for good environmental citizenship for mining companies through a stable tax regime in order to build a more harmonious relationship between the government, mining companies and local communities and to create a better investment climate.

The study also concludes that it is important for the GOP and/or relevant organizations to provide training to regional and local governments on how to record the acquisition and use of revenues (particularly those obtained from the canon) in a transparent and efficient manner. Furthermore, in line with the decentralization efforts underway in the country, capacity needs to be developed for the management (including financial, accountability and procurement procedures) of funds so that there is greater transparency, trust, and a more efficient use of resources. The study concludes for this particular area the following policy options: (i) fiscal information dissemination at all levels (including regions and municipalities that benefit from mining canon; (ii) revise legislation so regional and local governments have the option to use revenue from canon and royalties for social and environmental projects if deemed a priority issue; (iii) promote technical assistance to enhance regional and local capacity to the rational use of mining proceeds; (iv) incorporate the principles of EITI and Global Reporting Initiative, whereby all stakeholders adhere to fiscal disclosure in order to promote trust and credibility.

Hence, it is essential that government and industry assume their respective roles in contributing to the promotion of environmental and socially responsible mining in Peru. Some areas for intervention are analyzed and outlined in this study, including legal, policy and institutional reforms, economic policy instruments, and voluntary agreements. However, a more proactive government and industry role is not without risks (ranging from ill-conceived policies to the inducement of expectations that might not be fulfilled), which will have to be carefully managed and assessed. Nonetheless, the authors believe the risks can be managed and that the benefits of improving the mining sector outweigh these risks.

INTRODUCTION

Mining in Peru is poised for a second generation of reforms, going beyond the privatization, investment, and impressive expansion of the past 15 years to a more comprehensively sustainable future in which economic gain, environmental concerns, and social issues are better balanced and better managed. On this, at least, all key stakeholders – the government, the mining companies, local communities, and civil society -- agree. The purpose of this report is to contribute to that effort, by examining the key issues, analyzing the current policy and institutional framework, and providing the players with strategic options based on international experience and best practices.

To grasp the complexity and importance of this new phase of reform, it is useful to glance back at the history of the mining sector. Dating back to pre-Columbian times, initial extraction of gold and silver was clearly small-scale by modern standards, but enough to dazzle and partly finance the Spanish empire. The ransom the Conquistadores elicited for the Inca Atahualpa is reckoned to have been approximately 7,000kg of gold and 11,000kg of silver and, although it did not save his life, it triggered a long tradition of foreign interest in Peru's mineral wealth. The colonial administration made gold and silver extraction its main economic activity, much of it based on forced labor. Between them, the initial treachery and colonial exploitation ensured that, ever since, mining has been associated with one of the most unfair, exploitative, and polluting activities in the country. Contemporary mining has inherited and, to an extent, contributed to this negative perception since, for the most part, it has been developed in poor and sometimes extremely poor rural areas, with few benefits to local citizens and scant concern for the environment.

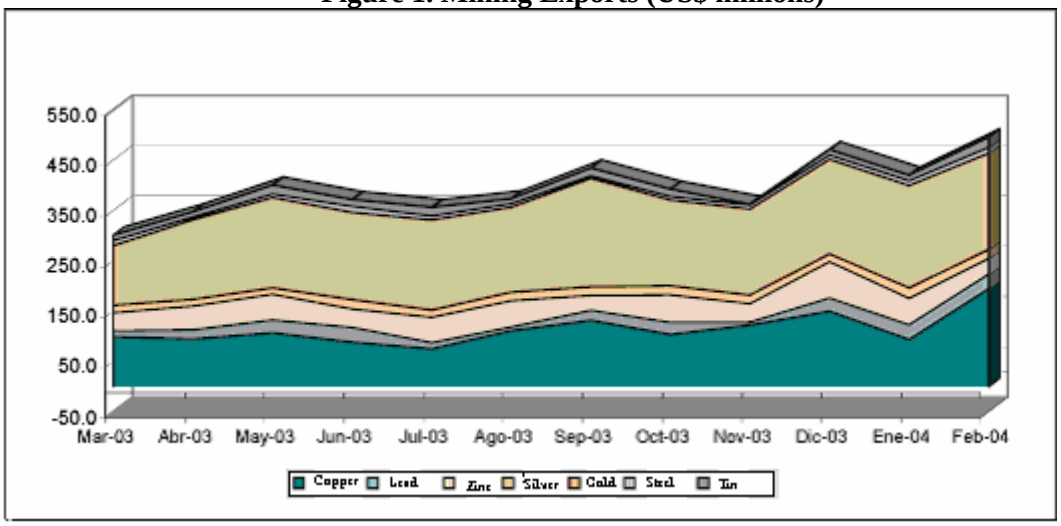
During the early 1980s, mining development was conducted, in large part, by state-owned companies and, in their case, focused on metals for export, such as iron, copper and silver. Over the past decade, a comprehensive mining privatization process began as part of the first generation of reforms. US$9.8 billion dollars were invested in the Peruvian mining sector between 1992 and 2004 by both domestic and international companies[2], and an attractive sectoral investment framework was established. This process enhanced competitiveness, encouraged the growth of private sector investment in exploration and mineral production, and contributed to Peru achieving exceptional mineral production rankings in relation to world output. Currently, Peru ranks second in silver and tin production, third in the combined output of zinc and lead, fifth in copper, and sixth in gold.[3]

Hence, the country is well endowed with numerous identified mineral deposits and has important and attractive geological conditions and structures. Until the early 1990s, copper, zinc, lead, silver and iron accounted for about 97 percent of mineral exports, which allowed a diversified minerals export structure and some stability vis-à-vis the fluctuations of commodity prices. By the late 1990s, gold evolved rapidly as a major mineral product, accounting for 34 percent of minerals exports in 2000, compared to 20 percent at the start of the decade**.** Furthermore, the volume of gold produced between 2000 and 2003 increased by 23 percent, according to the Ministry of Energy and Mines (MEM). Currently, Peru accounts for 6.1 percent of total worldwide gold production.

2 Ministry of Energy and Mines (MEM). "Inversión Comprometida en Minería 1992-2007 (US$MM". [Investment Commitments in Mining 1992-2007 in US$mn]
[http://www.minem.gob.pe/mineria/estadisticas/excel_conten/cuadro_Inversiones_1992_2007.xls
3 See Appendix # for more details about Mineral Production Indicators

According to the Central Reserve Bank of Peru, the mining sector attracted more than US$2.2 billion between 2001 and 2003 alone, equivalent to 37 percent of total foreign investment in Peru during that period. Thus, while the GDP growth rate over the past ten years has averaged 4 percent per annum, the rate of growth of the mining sector has averaged 10 percent. Mineral exports have also increased in the past decade, from US$ 1.197 billion to US$4.573 billion (MEM 2004): over half Peru's total exports.

Figure 1. Mining Exports (US$ millions)



Source: MEM

This substantial shift toward gold mining, major investments in the 1990s, and ensuing expansions of capacity, established the importance of Peruvian mining both domestically and internationally. Domestically, apart from their contribution to exports, mining activities are a significant contributor to Gross Domestic Product (6.6 percent in 2003), employment (over 400,000 jobs, directly and indirectly)[4], and government tax revenue (4.5 percent in 2003). This last contribution is likely to increase substantially following Constitutional Court ratification, in April 2005, of a new law imposing royalties on mining company sales (although the specifics still have to be worked out in enabling regulations to the law). Between them, the mining "canon" (50 percent of mining companies' corporate income tax), the "derechos de vigencia" (concession rights fee), and the new royalties, finance a large part of the relatively minor, but socially important, sums that central government re-channels to the provinces under Peru's ambitious decentralization program. Fuelled by new projects coming on stream (Las Bambas, Bayobar, Alto Chicama), mining sector growth in 2005-2007 is projected at 6.6 per year, far higher than the rate of growth of the economy as a whole (which averaged 4 percent per annum over the past decade). Internationally, Peru's share of world mineral markets in basic and precious metals is already significant and set to expand as the mega-projects reach production stage.

That is the upside. The downside, which prompts this "Analytical Advisory" study, is that almost all stakeholders in the sector are dissatisfied to a point that threatens projected expansion. The mining sector in Peru today is characterized by a pervasive lack of trust, some of which, as we saw, has longstanding historical roots, and some of which has been exacerbated by contemporary

[4] Ministry of Energy and Mines (MEM). Opinión del Perú Sobre el informe Final de la Revisión de las Industrias Extractivas al Banco Mundial [Peru's opinion regarding the final report to the World Bank on the extractive industry review] Lima: Peru, February, 2004

mining. The mining companies find even the reformed regulatory environment of the 1990s cumbersome and view the latest law imposing royalties on their sales, for instance, as "yet another hurdle." They even give little credibility to their own local lobby, the National Society of Mining, Petroleum, and Energy (SNMPE), and they doubt whether even the professionally improved Ministry of Energy and Mines has the capacity, pragmatism, and resources required to both promote and regulate the sector.[5] The government feels that mining companies could and should pay more in taxes and do more to ensure the safety and welfare of the local communities near the mining sites. Those communities suffer from unfulfilled expectations as well as the scars of environmental degradation, which fuel the perception that new mining operations will leave behind additional environmental legacies, in addition to the hundreds of eyesores and health hazards from the past that dot the country and have still not been addressed. Often these conditions contribute to social conflicts, as recently witnessed in Cajamarca, La Oroya and Ancash (described in more detail further below). In short, in the past decade of growth, policies and institutions have not evolved to adequately address the environmental impacts and social conflicts from mining activities and to guarantee sustainable and responsible growth for the sector.

Much of this has to do with poor communication and a lack of arbitration. Unlike other sectors, the potential environmental and social issues associated with mining and ore processing are considerable and complex. The geographic location of a mining complex or a smelter imposes constraints on all aspects of mining development, including extraction methods, location of mining facilities, new infrastructure and services requirements, and the suitability of waste management or disposal methods. These factors in turn can profoundly influence the environmental, social and health implications of mining developments, as well as the economic viability of developing a deposit.

ENVIRONMENTAL ISSUES

The environmental issues associated with mining activities are well documented in Peru. Environmental impacts are known to occur during each phase of the mining cycle: (a) exploration; (b) mine development; (c) extraction (underground and open pit) and mine operation; (d) ore beneficiation/processing; (e) storage and transportation of ore; and (f) mine rehabilitation. Depending on the process employed in each phase, environmental impacts can be generated through: (i) improper disposal of waste rock; (ii) air pollution from smelting operations; (iii) inadequacy in tailings containment, treatment and disposal of toxic wastes, which often leak to water sources; (iii) construction of infrastructure, road access, and operation of energy plants; and (iv) construction of work-camps and operational town-sites. In turn, each of these activities has the potential for creating adverse impacts on the air, hydrology and water quality, on biodiversity and ecosystems, on health and safety and on infrastructure. While the obvious impacts may occur in the immediate vicinity of the mine and its waste dumps, communities and ecosystems further away may also be exposed to the adverse impacts of mining operations (particularly if wastes leak to watersheds which carry these substances to remote areas). (Table 1 provides a detailed summary of potential social and environmental impacts of mining activities in each stage of their cycle).

[5] Interview with a foreign former CEO of several large Peruvian mining companies, April 2005.

Mining operations may be either large, medium, or small/artisinal.[6] Each of these categories has specific elements that characterize its operations and each category differs in its capacity and commitment to addressing the environmental and social issues the mining activities generate. A detailed description of the characteristics of each of these types of mining operations is included in Appendix 3.

Prior to the 1990s there was no specific legislation or policies to regulate the environmental performance of mining companies in Peru, nor its impact on society. Consequently, there were few or no steps taken by mining companies (either private or state-owned) to mitigate pollution and environmental degradation. Most companies considered that by paying taxes and helping local communities (through the creation of jobs and basic infrastructure) they were making sufficient contributions to the well-being of the country. It was not until recently that companies began to change their corporate culture and started addressing environmental and social issues. This change, however, has not been swift, even among companies, and in many cases it has been a slow learning process. It is now evident (judging by SNMPE's code of ethics) that some companies pay attention to their and the mining sector's image. Experience has shown that if companies do not adhere to high standards, there may be large embedded costs that could potentially lead to a decrease in foreign investment in the sector.

Addressing environmental impacts from mining, including the ongoing damaging impacts of past mining and smelting operations, poses a serious challenge for a country like Peru. The mining environmental legacies (MELs) have demonstrated that the harmful effects from mining operations can be long-lasting and that society continues to pay a price for extraction of natural capital stocks that were left without appropriate treatment by previous generations. Currently, there are approximately 170 "orphan" mining environmental legacies (MELs without any legal owner to take responsibility for the required clean-up). While current legislation requires that an appropriate mine closure and remediation be implemented within the lifecycle of an operating mine, there are many sites with lawful owners (including the government) that have not taken the necessary steps to carry out satisfactory remediation.

Although the institutional capacity to address environmental issues and conflicts in the mining sector has evolved significantly over the last decade, there are a number of challenges which hinder the consolidation of an adequate framework for environmental governance. These include: (i) a lack of technical and institutional capacity; (ii) limited funding; (iii) weak environmental management tools (including licensing, monitoring, and enforcement); and (iv) an inherent conflict of interest at the heart of the MEM stemming from the fact that is supposed to be both the key promoter and the environmental regulator of a complex sector.

SOCIAL ISSUES

Social issues in connection with the mining industry are intricately intertwined with environmental impacts and perceptions and may be divided into two broad categories: conflicts at or near the mines (Chapters 3 and 4), and nation-wide malaise regarding the distribution and use of the proceeds, which is a social and national political issue (Chapter 5).

[6] This study will not cover: (a) nonmetallic mining given its small bulk volumes when compared to metallic mining; and (b) small-scale mining since: (i) there are multiple studies available on the subject, including the World Bank's *An Environmental Study of Artisinal, Small and Medium Mining in Bolivia, Chile, and Peru* and *Minería Informal y Medio Ambiente en el Perú*, by GRADE/Pasco-Font, Alberto, the MSSD Report (see references), and others; (ii) the GAMA Project financed through the Swiss Development Cooperation-COSUDE directly finances activities related to small scale mining; (iii) some of the Peru-Canada (PERCAN) projects are expected to address small scale mining; and (iv) the analysis and recommendations of this report could be applicable to improvements in small and artisinal mining.

Social conflicts are generally rather complex processes that involve a number of stakeholders, a lack of legal definition of land titles, and a weak state presence. Currently, a growing number of residents oppose new mining activities being developed in their localities, based on fear of pollution and environmental damage and a perception that in other areas of the country mining operations did not benefit or improve the living conditions of mining communities.[7] This raises a series of questions as to what is being done and can be done by the Government and by mining companies to: (i) address environmental issues in mining areas and improve overall performance; (ii) develop realistic expectations as to what communities, regional and local governments can expect from mining operations; and (iii) build trust with local communities and other key stakeholders.

Some of the most common social issues in the various formal mining scenarios include:

1. Unfulfilled expectations for employment and benefits;
2. Land acquisition and resettlement impacts;
3. Lack of adequate communication among companies, communities and the government in the licensing process;
4. Weak enforcement of regulations or even absence of the government;
5. Lack of local capacity for negotiating and management; and
6. The perception of mining as a polluting activity that particularly affects water resources, produces emissions that contaminate the air, and adversely affects public health.

Box 1 highlights some recent conflicts that have come to typify the negative image of mining as a polluting activity.

Box 1. Examples of Recent Conflicts

La Oroya

The smelter and refinery at La Oroya, a former government enterprise now owned by Doe Run Peru SRL, illustrates the risks of environmental damage from mining/smelting operations. Pollution from La Oroya includes toxic atmospheric emissions such as sulfur dioxide, cadmium, arsenic, and particle matter. According to the General Direction of Environmental Health (DIGESA), the concentrations of lead monitored between 1999 and 2002 at La Oroya exceed both the World Health Organization (WHO) and Environmental Protection Agency (EPA) standards. During November 2004, Doe Run signaled that, given its financial constraints, it would need an additional 5 years to fully comply with its agreed environmental management and adaptation plan (PAMA). The citizens of La Oroya, fearing that the government could shut down Doe Run's operations at the smelter for failure to comply with its PAMA leaving a large number of the inhabitants of La Oroya without a job, began blocking Peru's central highway. In spite of disapproval by NGOs and the private sector (including the SNMPE), MEM responded to the pressure from local residents by enacting a supreme decree by which Doe Run Peru could request an extension until 2011 to comply with its PAMA. Experts agree that a technical solution would have been a more adequate solution to ensure that the company complies with its environmental responsibilities. This decision underscored several weaknesses and risks: (i) MEM's difficulty in fulfilling a double role of enforcing environmental regulations while promoting the growth of the sector; (ii) reinforcing the perception of many critics that MEM's decisions are influenced by interests from mining companies rather than by unbiased technical analysis; (iii) undermining all

[7] See, for instance, the protests in Cajamarca against the exploration of Cerro Quilish by Minera Yanacocha S.R.L.

previous (and commendable) efforts in environmental management of the sector and by those mining companies which have made significant investments to comply with and fulfill their respective PAMAs; and (iv) setting a negative precedent whereby mining companies could find it easier (and inexpensive) to pressure local communities and the MEM to accept a delay in the fulfillment of their PAMAs through local persuasion and protests, rather than carrying out the necessary investments for complying with international environmental standards.

Tambo Grande

The Tambo Grande case illustrates community resistance to mining activities due to fear that they could damage their agricultural livelihoods. The concession at Tambo Grande was acquired through a privatization process and, pursuant to its concession plan, an exploration and drilling program began on the deposit, which is located below an agricultural community that ekes a living mainly from mango and lime production. Based on the fears of the fruit producers in the region that mining deposits would be lifted by winds and cover the fruit tree leaves and that the mine would use up the scarce water supplies in the area and thereby destroy their livelihood, the community's reaction to exploration was volatile and reached a pinnacle of hostility when the mining company offices were burnt down in February of 2001. A tense environment persists to this day. The Government is approaching the situation with care, because any actions taken will establish a precedent in the execution of further mining projects in the country[8].

Cajamarca – Minera Yanacocha

Minera Yanacocha SRL, one of the largest mining consortiums in Peru[9], indicated that there had been a mercury spill caused by an accident in the transportation of this chemical in June of 2000. The mercury spilled into the streets of a nearby village. Not understanding what it was, some of the residents picked and collected the mercury, possibly thinking that it had some economic value, creating a serious health risk. The Company reported that it was able to recuperate 147 of the 150 kg that were spilled. This incident points to carelessness on the part of the company and yet no one was fired after the accident. However, the resulting impact on the company's image, as well as that of the mining sector as a whole, has since been very negative.

One of the most recent incidents in Cajamarca involves the suspension of exploration at Cerro Quilish (considered a rich gold deposit), following protests and road blocks by local communities, which claim that the project could damage water supplies (Cerro Quilish is believed to be the source of water for the city of Cajamarca, which has 117,509 inhabitants, although subsequent studies conducted by experts have refuted this claim). Part of the problem here is that Environmental Impact Assessments and Prior Consultation/Consent are not required during the exploration stage. However, the company has now acknowledged that further hydrological studies need to be carried out as part of an environmental impact assessment.

A broader social issue revolves around the rational use and distribution of mining proceeds and the enhancement of transparency among stakeholders. According to the MEM, revenue from the mining canon and concession rights fees enabled the GOP to

[8] See Appendix 2 for more information about Tambo Grande.
[9] Co-owned by Newmont Mining Corporation of Denver, Compañía de Minas Buenaventura of Peru, and the International Finance Corporation

distribute $184 million dollars to the different regions of Peru between 2001 and 2003. Although the calculation and amount of revenue that the GOP receives from mining companies and distributes to the different regions is public, the information is not easily accessible to rural inhabitants, since it is primarily posted on internet portals. The ability of regional and local governments to efficiently and transparently manage these funds and to implement development projects specifically designed to contribute to social and environmental improvements, is limited. This issue is discussed in detail in Chapter 5.

ORIGINS OF THIS STUDY AND STRATEGIC FRAMEWORK

During the 1990s, the World Bank assisted the Government of Peru (GOP) in its efforts to: (a) establish enabling conditions to attract mineral investments; (b) reform the role of the government from that of owner to regulator; and (c) shift the responsibilities for operational activities to the private sector through the implementation of first generation reforms of the mining sector carried out under the Bank-financed Energy and Mining Technical Assistance Project (EMTAL). During the implementation of this project, which closed in 1999, it became clear that the GOP's framework for addressing environmental matters was cumbersome and unrealistic. Since then, this framework has been superseded by rapidly evolving international environmental regulation and management models for the mining sector. That is why both public and private sector stakeholders in Peru recognize the need for a second generation of reforms to consolidate past achievements, ensure adequate institutional arrangements and enhanced capacity, and seek to promote a more sustainable and responsible mining sector.

As part of the World Bank's Country Assistance Strategy (CAS-2002), the GOP requested an advisory and analytical activity (AAA), such as this study, to support the development of internationally accepted, sustainable, environmentally friendly, and socially viable mining policies and controls. The GOP seeks to develop its capacity to resolve disputes arising from environmental and social impacts, which have, in some cases, prevented investment, and to set up a regulatory framework to prevent conflict and facilitate dialogue. The government also seeks to improve the livelihood of communities affected by mining and maintain an attractive climate for private investment in capital intensive large-scale mining activities. The counterpart for the elaboration of this report is the Ministry of Energy and Mines (MEM), but the authors also engaged in consultations with the private sector and civil society.

This AAA is the first detailed technical study developed in a mining member country after the Extractive Industries Review (EIR) was completed in 2004. The EIR was launched by the World Bank Group to discuss its future role in the extractive industries in response to concerns of its stakeholders. The aim of this independent review was to produce a set of recommendations to guide involvement of the World Bank Group in the oil, gas and mining sectors. The discussion was within the context of the World Bank Group's overall mission of poverty reduction and the promotion of sustainable development. This global review was initiated in July 2001 and culminated with the EIR recommendations published in the Final Report in December 2003. More recently, the World Bank Group Management published a draft response to the EIR on June 4, 2004, indicating key areas which the extractive industries should promote and seek reform[10]: (i) Poverty Alleviation; (ii) Transparency; (iii) Governance; (iv) Renewable Energy; (v) Social Inclusion; (vi) Sectoral Composition; and (vii) Environmental and Social Issues. A detail description of the EIR can be found in Appendix 6.

[10] "World Bank Board Agrees Way Forward on Extractive Industries Review". World Bank Group. August 3, 2004.

The analysis and recommendations in this study are in line with the EIR's principles and recommendations in that it promotes: (i) concrete steps to improve overall environmental performance for new and ongoing mining operations; (ii) broad community support for mining project approval; (iii) improved and strengthened communication between community, government and private sector; and (iv) transparency and information disclosure in the mining sector. This report also takes into account the GOP's response to the EIR and is consistent with its conclusion that the World Bank Group should continue to be engaged in the sector by providing technical assistance and support to address poverty alleviation and sustainable development in the sector. In addition, a common purpose of this report is for the World Bank and the GOP to identify the policy options and interventions required to ensure that mining activities contribute to sustainable development and poverty reduction.

Thus the AAA seeks to address the above-mentioned issues to ensure that extractive industries contribute to sustainable development and poverty reduction. This study is also consistent with the objectives of the above-mentioned August 2002 Country Assistance Strategy in that it gives the government tools to increase competitiveness, revenues, and employment through the reduction of investor risk related to environmental and social issues, and promotes institutional reforms in line with international standards for environmental and social practices. The analysis is expected to yield analytical and operational recommendations, which could support future investment by the Bank and IFC and complement the existing knowledge base of the mining sector in Peru. Furthermore, the timing of this work is appropriate because:

i. The GOP has expressed its willingness to improve and reform its policies and role in the mining sector by addressing social and environmental impacts and conflicts;
ii. The Extractive Industries Review consultations (and Peru's response to the EIR) reveal the need for the World Bank Group to stay engaged in the mining sector in countries like Peru and even increase involvement in areas such as artisinal and small scale mining and sectoral governance;
iii. Recent concessions granted for exploration and extraction (i.e., Las Bambas and Bayóvar) could benefit from the policy options outlined in this study to ensure that the proposed projects adhere to strict social and environmental standards;
iv. There is a recognized need to continue evolving the environmental and social policy framework developed through 1990's and early 2000's, to limit the negative impacts of the sector; and
v. The global market for base metals has improved since the last CAS and Peru is in a position to increase investor interest through reforms.

Studies have also been prepared, since the late 1990s, in connection with Canadian International Development Agency (CIDA) and IFC projects in Peru. CIDA provided support under the Peru-Canada (PERCAN) Project for mining sector institutional strengthening, including equipment and capacity building. A second PERCAN Project is now being formulated, which would provide CN$6.0 million to address environmental and social issues, and support capacity building in the MEM and for the Regional Mining and Energy Directorates (DREMs). Due to the ongoing decentralization process in Peru, emphasis would be placed on training the DREMs to address licensing, environmental, social, fiscal and conflict resolution issues in rural areas. Likewise, the International Finance Corporation (IFC) is considering co-financing a US$306 million project to modernize the Southern Peru Copper Corporation (SPCC) smelter at Ilo, which is expected to bring environmental benefits to the affected community since it will have to incorporate World Bank and IFC environmental safeguards. In addition, IFC has recently begun a series of pilots in Cajamarca to develop municipal capacity in the appropriate use of proceeds from the mining

canon. This AAA will help to provide a framework for the government's role, which is likely to provide a useful input in both the SPCC and PERCAN initiatives, as well as other work being carried out in the sector.

Finally, in the Mining, Minerals and Sustainable Development (MMSD)[11] study carried out in Peru in 2002, important themes were prioritized by a multi-stakeholder audience. This study concurs with the themes prioritized by the work done in the MMSD.

Determining the Key Priorities

A review of all the above literature and projects, including various recent participatory studies carried out in Peru in connection with the mining sector formed the grist for this study. The lessons and conclusions they yielded were then discussed in preliminary consultations with stakeholders and led to a decision to focus, with the GOP's agreement on the following key thematic areas:

1. **Mining environmental legacies (MELs),** which constitute a serious environmental, social, health and safety hazard;
2. The **environmental governance framework,** which faces a number of challenges and limitations;
3. The **capacity and framework required to address social issues** related to mining operations; and
4. The need for **fiscal transparency** and capacity at the local and regional level for the rational use of mining proceeds.

Further extensive consultations with international experts provided information on international best practices and lessons learned that could be applied to Peru. Consultations were held with national specialists and ministry staff as well as with World Bank, International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) staff, the Andean Development Corporation (CAF) and the Inter-American Development Bank (IDB). Some of the lessons learned and best practices from other countries are analyzed to show how they can be adapted to specific circumstances in Peru.

The likely beneficiaries from this study are: (i) the GOP, which will benefit from a strategy on how to improve its role in the reduction of environmental and social risks to promote the growth of the sector, and therefore the growth of fiscal revenues; (ii) mining companies and investors which, by adhering to environmentally and socially sustainable policies, could limit time-consuming conflicts, promote local acceptance, and increase investments and production; (iii) the communities in poor rural areas with large-scale mining activities that traditionally bear the brunt of social and environmental degradation; and (iv) on-going programs and initiatives, such as the Peru-Canada (PERCAN) Project, for sector institutional strengthening.

The structure and "sense" of this study followed naturally from a combination of the above-mentioned past work done on the mining sector in Peru, the nature of the targeted beneficiaries, and, above all, from a sense of the urgency of addressing the environmental and social issues that could thwart or delay optimal development of an increasingly important part of the Peruvian economy. Thus we look, first, at the scope of past and ongoing degradation of the environment, in

[11] Glave, Manuel, & Kuramoto, Juana, (2000). *Minería, Minerales y Desarrollo Sustentable en el Peru.* Capitulo 8 de Minería, Minerales y Desarrollo Sustentable (MMDS) en América del Sur.

order to appreciate the magnitude of the problem. Then we look at the social tensions generated partly, but not exclusively, by damage to the environment. We examine the governance framework for dealing with both these sets of issues (the environmental and the social), including in the latter the need for transparency in the distribution of proceeds from the industry. Given this focus on "enlightened responsibility," there are a number of factors this study does not pursue: it does not delve in any depth into investor gripes, for instance; nor does it attempt to gauge what concessions to mining companies Peru might feel the need to make to remain competitive, in attracting investors, vis-à-vis its neighbors. It assumes that certain environmental and social policy standards are increasingly accepted and can be attained through better communication and pragmatic negotiation.

Map 1. Mining Locations in Peru

Table 1. Potential Environmental & Social Impact of Mining Activities[12]

Potential Impacts	Mining Activities	***Exploration and ore extraction***	Exploration drilling	Resettlement (if necessary)	Extraction and waster rock removal/disposal	Rock blasting and ore removal	Mine dewatering	Placer and dredge mining	Small-scale artisanal mining	***Ore processing and plantsite***	Plant site, materials handling, etc.	Stockpiling	Beneficiation	Phytometallurgical processing	Hydrometallurgical processing	Water usage (all industrial and domestic)	Use & storage of process chemicals	Tailings containment/disposal	***Infrastructure, access & energy***	Access roads, rail & transmission lines	Wastewater treatment and disposal	Pipelines for slurries or concentrates	Power sources & transmission lines	Construction camps, town site	***Decommissioning***	Regrading and recontouring	Stabilization of waste dumps & tailings	Mine
Air Quality																												
Increased ambient particulates (TSP & PM-10)					■	■					■	■		■				■		■			■	■		■		
Increased ambient Sulfur dioxide (SO_2)														■									■	■				
Increased ambient nitrogen oxides (Nox)														■									■	■				
Increased ambient heavy metals					■	■					■	■		■				■		■			■	■				
Hydrology, hydrogeology & water quality																												
Altered hydrological regimes					■		■	■	■		■				■	■		■		■	■		■	■		■		
Altered hydrogeological regimes							■								■	■												
Increased heavy metals, acidity or pollution			■		■		■	■	■		■	■			■		■	■		■	■		■	■		■	■	
Increased turbidity (suspended solids)			■		■			■	■		■	■			■			■		■	■	■	■	■		■	■	
Risk of groundwater contamination			■		■	■	■		■						■		■	■			■						■	
Ecology and biodiversity																												
Loss of natural habitats & biodiversity (OP-4.04)			■		■			■	■		■							■		■		■	■	■				
Loss of rare and endangered species					■			■	■		■							■		■		■	■	■				
Effects of induced development on ecology			■						■											■				■				
Effects on riverine ecology and fisheries					■		■	■	■			■					■	■	■		■	■		■				
Impacts due to effluents, or emissions			■		■			■	■				■	■	■			■			■					■	■	
Social concerns																												
Resettlement issues (OD 4.30)				■	■	■		■			■							■		■			■	■				
Effects on indigenous peoples (OD4.20)			■	■	■	■		■	■		■							■		■			■	■				
Loss of cultural heritage or religious sites			■	■	■			■			■							■		■			■	■				
Loss of livelihood				■														■					■	■				■
Induced development issues			■	■																■			■	■				
Effects on aesthetics and landform					■			■	■		■							■					■	■				
Noise issues					■	■		■			■												■	■				
Occupational & public health concerns																												
Occupational health and safety concerns													■											■				
Hazards from process chemicals or explosives						■			■				■				■						■					
Potential increase in disease vectors				■					■															■				
Increased Potential for respiratory disorders						■			■				■	■			■						■					
Resource Issues																												
Effects of subsidence on surface resources							■																					
Agricultural land losses			■	■	■			■			■							■		■			■	■				
Loss of forestry resources (OP 4.36)					■			■	■		■							■	■	■			■	■				
Effects on surface water resources (OP 4.07)					■	■	■	■	■			■	■		■	■		■		■	■		■	■				
Effects on ground water resources (OP 4.07)						■	■		■				■		■	■		■			■			■				
Disruption to Infrastructure					■			■							■	■				■		■						
Effects on fisheries					■		■	■	■			■			■	■		■			■		■	■				

[12] "Environmental Assessment Sourcebook Update", (1998), Number 22. Environmental Department. World Bank. D.C.

CHAPTER 2. MINING ENVIRONMENTAL LEGACIES

Main issues associated with environmental legacies and impacts

Addressing the environmental degradation caused by current and prospective mining operations may be an overwhelming task. However, in many ways, the ongoing damaging impacts of past mining and smelting operations are far more troubling. As mentioned in the Introduction, these sites have demonstrated that in Peru (and throughout the world), the harmful effects of mining operations can be long-lasting and that society is still paying for past negligence.

Mining operations can produce very large volumes of waste often containing hazardous materials and pollutants. However, the use of certain technological processes can help reduce or mitigate the impact of these discharges[13]. Thus, the options and methods applied to long-term waste disposal, tailings, and mine closure are among the most critical decisions in the mining cycle. The failure of tailings containment or inadequate treatment or disposal operations could result in serious contamination, particularly in countries with active seismic activity like Peru. There are a number of important technical considerations that must be addressed to ensure adequate tailings containment and waste treatment and disposal to ensure the prevention of: (i) seepage; (ii) return of decant waters; (iii) dispersion by wind erosion; and (iv) negative impacts on biodiversity and ecosystems. While the environmental impact assessments (EIAs) process in Peru for new operations requires that project proponents take these risks into consideration and plan for adequate mine closure, unfortunately most previous mining practices disregarded the serious technical aspects of the handling and final disposal of wastes and chemicals, thus placing the daunting responsibility for addressing generational pollution issues (the mining environmental legacy-MEL) on current and future generations.

The impacts from MELs are well known and, to a certain extent, have been documented and categorized in Peru. Environmental legacies dot the rural landscape where mining operations took place and, in many cases, polluted nearby water sources, damaging ecosystems and human health. For example, some of the mining and metallurgical activities along the Rimac River are known to contribute to the pollution of the drinking water sources that supply the Lima metropolitan region[14].

Water is the resource most frequently polluted by abandoned mines and is also the main conduit through which impacts from MELs extend beyond the immediate site. Often, depending on the volume carried by the watershed, heavy metal concentrations are carried by watersheds long distances from their place of origin. Furthermore, elevated concentrations of heavy metals and increased levels of suspended sediment, acidity, hydrocarbons, and brine leaching can threaten surface and underground water quality, leading to health concerns and the degradation of aquatic habitats.

One of the most common and significant sources of water pollution from abandoned mines, particularly when sulfide mineralization is present, is acid drainage, which begins when surface

[13] Depending on the type of mine, ore processing may involve beneficiation- where mined ore is either concentrated for further processing or graded for sale -- followed by metallurgical processing and refining. The outputs of such processes are ore concentrates and waste materials in the forms of tailings (which often include process chemicals and heavy metals).

[14] It is worth noting, however, that there are several sources of pollution along the Rimac river besides mining, including agriculture.

or groundwater flows from or over abandoned mines containing sulfide mineralization. Discharge from adits or open pits, as well as surface flow over and seepage through sulfide-rich waste rock and tailings can produce acid drainage. In extreme cases, the exposed, relatively insoluble sulfide materials are then converted by oxidation to soluble sulfuric acid and iron compounds. The sulfuric acid, in turn, dissolves other metals found in the rocks, such as aluminum, copper, zinc, and cadmium. Although these constituents can occur naturally in water in small amounts, their concentration can increase substantially when exposed to acid drainage as a result of hydrological and weathering processes.

Moreover, MELs are known to cause and/or perpetrate certain social and economic impacts including: (i) loss or damage of productive land; (ii) loss or degradation of groundwater; (iii) pollution of surface water by acidity, sediments or salts; (iv) degraded livelihoods that are dependent on aquatic ecosystems that have been affected by leached pollution and contaminated sediments; (v) changes in river regimes; (vi) air pollution from particulate matter and/or toxic gases; (vii) safety risk of falls into abandoned shafts and pits; (viii) erosion and landslides; (ix) costs of treating health problems; and (x) displacement. Abandoned mine sites have also become targets of illegal mining by small-scale miners, who may use dangerous explosives and chemical substances to extract minerals and lack training in safety and environmental standards and consequently contaminate the environment. [15]

In addition to the obvious issues for nearby communities, most of the conditions caused by environmental legacies represent a considerable cost to the government which, according to the recently approved Law Regulating Mining Environmental Legacies (Ley No. 28271)[16], is responsible for cleaning up and rehabilitating abandoned (orphan) mining sites and their legacies.[17] The public has gradually become aware of the risks and potential impacts of legacies and is increasingly demanding action. Furthermore, mining and smelting environmental legacies are now a key factor in growing community opposition to current and future mining activities, and have been recognized as a potential source of conflict by the MEM. It is clear that unattended mining legacies (whether orphan sites, or those with identifiable concessions which by law are obliged to ensure its proper remediation) affect the overall perception of the mining industry.

GOVERNMENT PROGRAMS AND CURRENT KNOWLEDGE BASE

Although MELS were often an eyesore and their impact well known, it was not until the mid-1990's that the government attempted to categorize, prioritize, appraise, and map them.

Starting in 1996, the MEM began gathering data on the historical environmental legacies under the Environmental Legacy Elimination Project (EPA). That same year, the General Directorate for Environmental Affairs (*Dirección General de Asuntos Ambientales*-DGGA) began a program on Environmental Territorial Evaluations (*Evaluaciones Ambientales Territoriales*-EVATs) which focused on developing a diagnosis of the environmental conditions of key river basins and legacies, and proposing certain recommendations (BGR 2004). This effort led to the preliminary analysis of 17 different areas that have experienced mining-induced pollution. This program revealed that the river basins most affected by MELs include the Rimac, Mantaro, Pisco, Madre de Dios, Llaucano, Santa and Alto Huallaga. Of these watersheds, however, the Rimac River is

[15] van Zyl, Dirk; Sassoon, Meredith; Fleury, Anne-Marie; Kyeyune, Silvia, (2003), Mining, Minerals and Sustainable Development (MMSD) Report . *Abandoned Mines Working Paper (Apendix C) MMSD Report.* Santiago de Chile.
[16] *Ley que Regula los Pasivos Ambientales Mineros* – Passed by the Peruvian Congress on July 6th, 2004.
[17] Orphan environmental legacies are defined as those where the mining site has been closed for a long time and, by law, the mining company could transfer it to the State who will be responsible for its clean-up.

considered the greatest priority for treatment given the numerous sources of pollution along its banks, and given the number of people dependent on it (including the Lima metropolitan region).

From 2001 to June 2003, the *Environmental Legacies Elimination Project* (*Proyecto de Eliminación de Pasivos Ambientales*-EPA) sought to provide further detail on the characteristics of legacies and how to remedy them.

The objectives of the EPA Project can be summarized as follows:

- Produce a diagnostic assessment of the environmental impacts of each mining legacy;
- Draw up a detailed national inventory, identifying each legacy with its geographic location, key environmental risks, legal status, and physical characteristics;
- Identify and develop technologies for environmental rehabilitation;
- Carry out studies and works to remediate and rehabilitate the areas affected by environmental legacies;
- Take preventive measures to avoid the generation of acid drainage from mining operations, clearing and leveling of abandoned tailings;
- Reduce the risk of cracks or leaks in abandoned tailings; and
- Reduce, neutralize and/or eliminate the negative effects of environmental legacies on public health, flora and fauna, and economic activities in the surrounding areas, by, among other things, restoring and enhancing water, land and air quality through a series of actions, including reforestation.

The EPA project resulted in a preliminary inventory of 610 MELs[18] and showed that nearly 72 percent of them involve legitimate mining rights (i.e., an identifiable concession/owner), whereas 28 percent have neither rights nor identifiable owners. Additional results from this project included:

- Determination of the physical and chemical characteristics of 85 percent of the environmental legacies through a series of studies;
- Initiation of a pilot project in the region of Madre de Dios, involving the reforestation of ten hectares of impacted by mining land demonstrating the benefits of environmental recuperation to the local population; and
- Completion of the basic engineering study of the Rio Santa basin, which concluded that future investments for MEL remediation are needed in the region.

The EPA Project also helped to develop a preliminary estimate of the potential costs associated with remediation of MELs. However, the quality of most of the territorial evaluation studies is quite poor. That, combined with the lack of detail in the current inventories, makes it difficult to arrive at a reliable estimate of the cost of rehabilitating abandoned mines and environmental legacies. Even in countries like the United States, where detailed abandoned mine categorization and diagnosis has been done for many years, the estimated costs of reclaiming 557,650 abandoned mines oscillate between US$ 32.7 billion and 71.5 billion.[19] Thus, although questionable, the only current cost estimate for the rehabilitation of environmental legacies in Peru is about US$200-250 million[20]. However, this figure excludes the MELs under the

[18] However, the study did fully determine the potential environmental impact or risk.
[19] Abandoned Mines Working Paper (Appendix C), MMSD Report op.cit.
[20] Recent estimates provided by MEM (published in *El Comercio*, March 6th 2005). See also BGR's "Basis for the Remediation of Environmental Mining Liabilities: an Analysis of the Present Status (preliminary draft 2004).

responsibility of state-owned enterprises, which are significant (i.e. Centromin)[21]. Current estimates of the costs of rehabilitating the state-owned MELs are unknown. Consequently, additional studies and technical analysis with specific criteria (i.e. health and environmental risks) are required to determine in detail the specific characteristics of MELs and the realistic costs of clean-up.

Based on the values from the EPA, a preliminary list of the **most critical** MELs has been prepared (Table 2), together with the estimated costs required for their rehabilitation. Specialists and government officials, however, cast doubt on the accuracy of these estimated values assigned for remediation of MELs, which are accordingly unrealistically low[22].

Table 2. Priority Mining Environmental Legacies and Estimated Remediation Costs.

Locality	Province	Estimated Remediation Cost (US$ thousands)
Sinchao Mine waste dumps	Cajamarca	2,199
Mina Montoya and Quebrada Honda	Cajamarca	104
Mina Mesa de Plata	Cajamarca	499
El Dorado tailings pond	Cajamarca	619
Ticapampa tailings pond,	Ancash	13,274
S.Toribio Tajo, rubble and tailings pond	Ancash	120
Huancapetí tailings pond	Ancash	2,258
Pushaquilca pithead	Ancash	164
El Triunfo pithead	Ancash	83
Llipa tailings pond	Lima	N.A.
Millotingo tailings ponds	Lima	1,400
Río Pallanga mine tailings pond and drainage	Junín	482
Carhuacayán tailings pond and drainage	Junín	415
Huacracocha mine drainage and rubble	Junín	205
Pucará mine drainage and rubble	Junín	458
Tailings pond Pacococha tailings pond	Huancavelica	1,300
Dollar pithead drainage	Huancavelica	200
Madrigal mine tailings pond	Arequipa	2,200
Caychive-Huepetuhe gold mine area	Madre de Dios	50,000
Palca 11 mine tailings and drainage	Puno	1,500
Total		**77,480**

Source: MEM & BGR report

TECHNICAL ASPECTS OF ADDRESSING MINING ENVIRONMENTAL LEGACIES

Since the first environmental requirements and awareness began in the 1990's, some mining companies have demonstrated their commitment to ensuring a technically sound closure of their mining operations. While companies may be well-poised to address environmental legacies, they may often lack the technical know-how or resources for preventing and/or addressing their

[21] State owned MELs have so far not been thoroughly analyzed. Meeting with MEM officials (June, 2004).
[22] Interviews in 2004 with staff from BGR, MEM officials, and Mining engineers.

respective MEL. Likewise, the MEM currently lacks the capacity to be able to provide direct technical assistance to those that require it (whether through training programs, literature, advice groups, etc.).

Given the severity of MELs, and the current capacity limitations of the MEM and certain mining companies, a center of technical excellence that can provide guidance and support regarding the management of legacies has been identified as a key need for Peru. It is worth noting that some groups have begun to take action to fill this gap. *Avancemos Juntos* (Let's Move Forward), a non-profit group composed of prominent mining businessmen, ex-government officials, civil society and NGO representatives formed in May 2004, could eventually evolve into a center of technical expertise for addressing environmental legacies. This group has the support and recognition of both the SNMPE and the MEM (government officials do not form part of the group). Its objectives are to promote sustainable development and poverty alleviation and ensure adequate rehabilitation and remediation of the country's MELs. *Avancemos Juntos* could take on the much needed role in Peru of providing neutral and technically sound guidance to private and state-owned agencies in need of addressing their environmental legacies, and could complement overall MEM efforts and programs related to MELs.

Box 2. A Canadian Model of Technical Center of Excellence

The Mine Environment Neutral Drainage (MEND) program in Canada[23], the Global Center for Posting Mining Regeneration in the United Kingdom, and the Center for Mined Land Rehabilitation (CMLR) in Australia, can provide valuable lessons and serve as potential models for groups (such as *Avancemos Juntos*) that could eventually take on the role of serving as technical centers of excellence for addressing mining environmental legacies.

The MEND Program in Canada, for example, was implemented to develop and apply new technologies to prevent and control acidic drainage. With the help of the MEND, Canadian mining companies and provincial/territorial and federal departments have reduced the cost of fixing legacies that are caused by acidic drainage by at least US$400 million dollars. Funding for the MEND Secretariat comes from Natural Resources Canada and the Mining Association of Canada, which have invested $17.5 million over eight years. Similarly, in Australia the CMLR and its counterpart, the Sustainable Minerals Institute (SMI), were both established in 2001 as a joint initiative between the Queensland Government, the University of Queensland and the Minerals Industry. This institute has built upon existing expertise within the various centers and departments and provides an over-arching framework for advancing minerals industry research, education and capacity-building activities.

The technical aspects of reclamation and rehabilitation vary, depending on the type of ore, tailing disposal, and the physical and chemical characteristics of the site. Additional information on these issues is provided in Appendix 8.

Trends Affecting Rehabilitation

The mining industry's approach to the environment has gradually become more comprehensive and sensitive regarding environmental issues, and has adopted some new options for cooperative approaches. The National Society for Mining, Oil and Energy (*Sociedad Nacional de Minería*,

[23] To develop and apply new technologies to prevent and control acid drainage from MELs.

Petróleo y Energía, SNMPE), which represents the mining industry's interests, for instance, has developed a code of conduct whereby its members endorse principles on sustainable development and compliance with environmental and safety norms at all stages of the mining cycle. Since these principles are not binding, there is little or no leverage to ensure that companies take these principles to heart. Nonetheless, SNMPE suggests that failure to adhere to the code of conduct may lead to expulsion from the Society. At the very least, SNMPE's code of conduct reflects a change in the business culture of the mining industry. SNMPE also has entered into contracts with regional governments to develop specific projects for the conservation of the environment and social development. The recent acceptance by industry of the need for some voluntary measures and codes on the environment to complement government regulation could present an opportunity for action on abandoned mine sites.

Environmental codes, business charters and other commitments could be further developed to include innovative ideas with regard to environmental legacies and abandoned mine sites.[24] One area where progress has been made is in meeting the demand for qualified personnel to deal with environmental issues in the mining sector. With the support of Germany's Federal Institute for Geosciences and Natural Resources (BGR), SNMPE carried out the bilateral Peruvian-German Mining and Environment Project-PALMA (*Proyecto Peruano-Alemán Minería Medio Ambiente*) in 1997, to provide environmental training for professionals and managers from the mining industry and sectoral institutions. This effort has led to the inclusion of professionals qualified in environmental management in all major and medium mining and metallurgical operations in Peru.

In addition, certain NGOs and civil society have also played a key role in raising awareness with respect to environmental and social issues (including the ongoing risks of MELs). The Peruvian Environmental Law Society (*Sociedad Peruana de Derecho Ambiental* -SPDA) and the National Coordination of Communities of Peru Affected by Mining (CONACAMI) are some of the strong advocates for attention to environmental and social issues in the mining sector.

THE LEGAL FRAMEWORK

The conditions for addressing environmental legacies largely depend on the legal status of the site (i.e. whether the legacy has a title with an identifiable owner or whether the site can be declared orphan) and on the commitment, resources and technical capacity of those responsible for the site (whether private or state-owned).

While technical knowledge of rehabilitation and remediation methods is extensive and could become available to those companies that seek assistance for MEL rehabilitation, the lack of a clear legal framework and financing mechanisms may constitute a more serious impediment for taking concrete action. The Association for the Promotion of Development (PRODES) and EPA projects from the MEM have began the task of systematizing information concerning legacies and grasping the magnitude and severity of the problem. However, there continue to be vast information gaps, and further technical analysis, studies and definitions related to MELs are required.

Despite improvements in environmental awareness and legislation related to mining since the 1990's, the responsibilities and appropriate remediation methods for MELs are still only vaguely addressed by the legal framework. It was not until this year that specific efforts to address MELs

[24] UNEP/ Chilean Copper Commission Abandoned Mines Summary Report

were incorporated into the legal system[25]. As recently as October 2003, the law addressing mine closure (*Ley 28090, Cierre de Minas*) was enacted, requiring mining operations to submit a plan to the MEM and to provide financial guarantees for its implementation.

Likewise, MEM has recently published an environmental guide for the Closure and Abandonment of Mines, which contemplates the following:

- Protection of the life and health of the population located in the area of influence;
- Prevention of environmental degradation, avoiding negative impacts for water, air and land resources; and
- Reclamation of the disturbed area by making every effort to restore original conditions and, where that is not possible, to give it a different use so that it will be functional for the population of the concession area.[26]

While law 28271 (which regulates MELs) suggests that regional governments (through the regional Mining and Energy Directorates-DREM) would monitor and control the compliance with the plans, currently the DREM's capacity and manpower to carry out these functions is very limited. However, the MEM does have the authority to fine concession holders up to 600 UIT[27] in case of severe environmental damage. Promulgation of the implementing regulations for this law will help to further prevent and mitigate environmental legacies.

Box 3. Mine Closure Plans

Mine Closure plans must contain detailed information on all steps the mining company intends to take to preserve the natural environment and protect human health, among both miners and local populations. Mine Closure plans aim to reduce and/or eliminate solid waste, as well as liquid and atmospheric emissions and any other adverse effects of mining. Corporate management systems for mining sites must include closure plans as an integral part of mining operations, from survey/exploration of the site to its actual exploitation and to definitive termination of activities. They must also identify the financial resources the company will use to limit the impact on the environment, both during production and when activity is over. Likewise, mine closure plans must include measures to preserve air and water characteristics and to prevent soil erosion. Once mining production is finished, the mining facilities have to be removed in a timely fashion and reforestation plans activated. Mine Closure plans have to pay special attention to cases of mining activities in "protected areas". Furthermore, mine closure plans have to provide for technical information, such as hydrographic data, in order to guarantee proper management of surface and groundwater resources, geological data, the dimensions of the area occupied by the mine, its proximity to local communities, physical and chemical characteristics, and climate along with other environmental conditions specific to the site. They also have to contain detailed evaluations of the costs of preserving the environment, including the legal costs.

In December 2003, the Minister of the MEM and the executive branch issued Supreme Decree DS. 042-EM, which, among others things, required project proponents for mining concessions to make a sworn commitment to environmental excellence (*Excelencia Ambiental*) and to respect local institutions, authorities, culture and customs. In addition, this environmental excellence is to be extended to include the appropriate closure of operations.

[25] The environmental legal framework for the mining sector is developed in further detail later in this study..
[26] (MMSD Mine Policy)
[27] This norm has not yet been passed but the environmental sanction limit is 600 UIT. (Tax Unit/Unidad Impositiva Tributaria-UIT)

In April 2004, the Draft Regulation for Mine Closure (*Reglamento para la Ejecución del Plan de Cierre en la Actividad Minera*), aimed at regulating the process of closing down a mining operation after it reaches the end of its useful life, was published for comments. The Regulation also defines the terms and conditions for submitting financial guarantees to ensure that necessary reclamation measures can be properly financed. In addition, this Regulation specifies steps to be taken in the event that the mining operator goes into bankruptcy.

The need to address the environmental legacies of old, inactive, and abandoned mineral operations within a comprehensive framework for mineral/mining environmental management led to a first legislative initiative on September 3, 2002 (*Proyecto de Ley 03801*). Afterwards, a modified version (*Dictamen: 3801/2002-CR, published on April 24, 2003*) was presented to Congress, and finally approved and enacted on July 6, 2004, as the **Law for Environmental Legacies of Mining Activities (No. 28271)**.

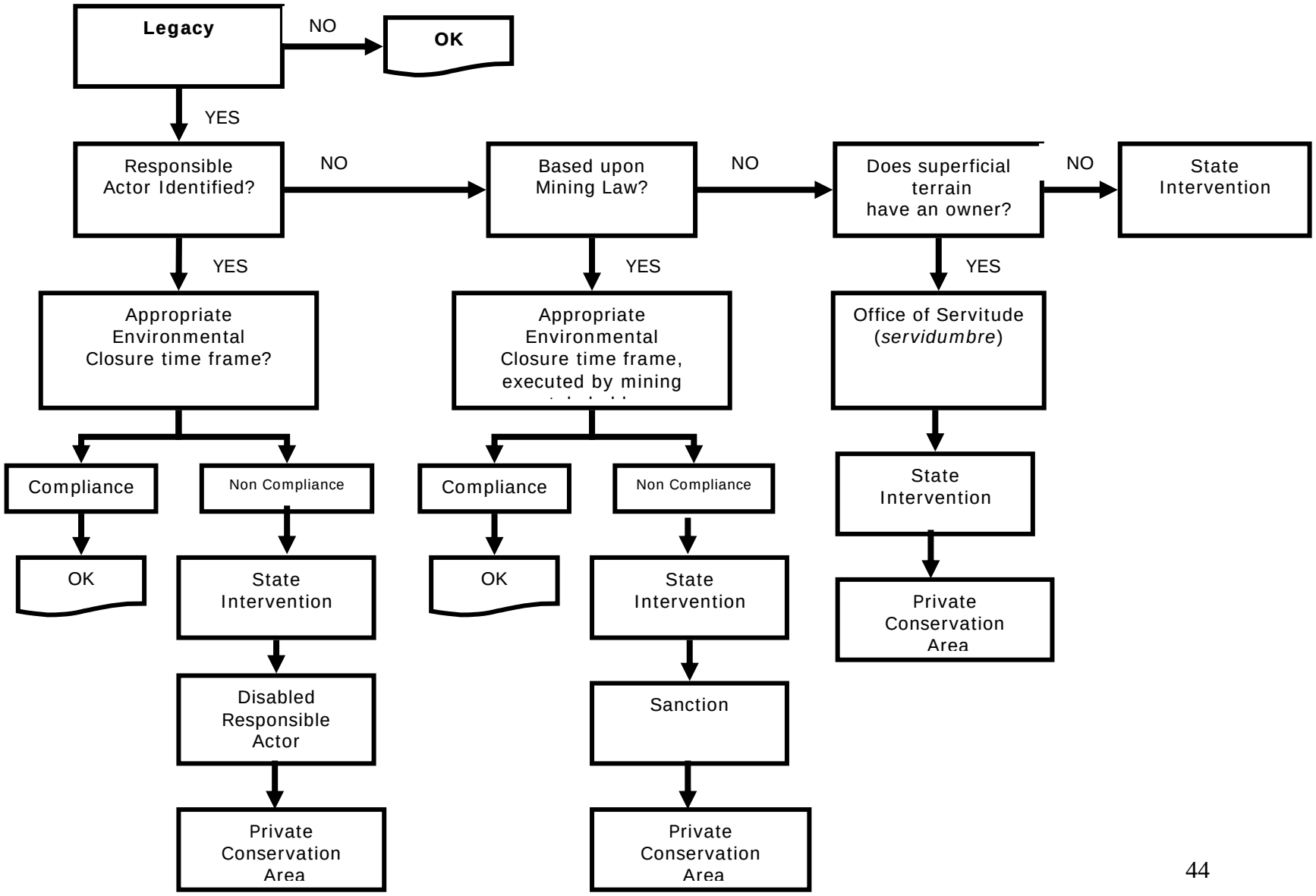
Table 3. Timeline of Environmental Legacy Policy and Legislation

Date	Description
1996	EPA Project-MEM launched initiative for the collection of data on the historical environmental legacies
1996	Start of the Environmental Territorial Evaluations-General Directorate for Environmental Affairs (DGAA) program to develop a diagnosis of the environmental conditions of key river basins and legacies
2001-2003	Environmental Legacy Elimination Project worked to provide further detail on the characteristics of legacies and seek remediation
2002	Law Project 3801-initiative to address environmental legacies of old, inactive, and abandoned mineral operations within a comprehensive framework for mineral/mining environmental management
2003	Mine Closure Law (Law 28090)-requires mining operations to submit a plan to the MEM and to provide financial guarantees for its implementation
2003	DS. 042-EM was passed, requiring project proponents for mining concessions to make a sworn commitment to environmental excellence and to respect local institutions, authorities, culture and customs
2004	Law for Environmental Legacies of Mining Activities (No. 28271)-Regulates Mining Environmental Liabilities
2004	Draft Regulation for Mine Closure, aimed at regulating the process of closing down a mining operation after it reaches the end of its useful life, was published for comments

The Law on Environmental Legacies of Mining Activities

The objectives of the Law are comprehensive and seek to regulate: (i) the identification process for environmental liabilities stemming from mining activities; (ii) responsibility for the remediation and rehabilitation of areas affected by environmental liabilities; (iii) establishment of a financing mechanism; and (iv) mitigation of the negative impacts of MELs on the population's health, the surrounding ecosystem, and properties. Diagram 1 serves to explain the process and flow for a proposed modification of the MELs law (28271).

Diagram 1. Proposed Path for Modification in The Environmental Legacies Law



Despite its clear intent, there are a number of potential legal loopholes and failures in the law which, if not clarified in the short term, may provide perverse incentives for entities (whether mining companies or financing institutions) to evade their responsibilities for the remediation of MELs by transferring the liability to the state. In addition, Law 28271 (The MELs law) fails to establish any connection to the targets set forth in the timetable of the Mining Reference Plan for 2000-2009, which contemplates the complete remediation of environmental legacies in Peru.

There are four representative categories for classifying the different types of environmental legacies in the mining sector.

Table 4. Environmental Legacy Categories

1. Damage done by current owner Has funds to pay for rehabilitation	2. Damage done by current owner No funds to pay for rehabilitation
3. Damage was done before concession was granted to current owner Has funds to pay for rehabilitation (for current concessionaire)	4. Damage was done before concession was granted to current owner No funds to pay for rehabilitation (for current concessionaire)

The above typology reflects the complexity involved in trying to address environmental legacies where, in some cases, it is not clear who is entitled to assume responsibility for rehabilitation. Providing responsibility for MEL rehabilitation is only partially addressed under the current law. Thus, there are still some grey areas concerning accountability for clean-up when concessions have been granted by the government after the environmental damage was done, and the company that has inherited the legacy does not considerate it to be its duty to assume such a daunting task, in spite of infringing on the polluter pays principle of the environmental code. Thus, the MEM will need to define clear determinants for categories 2 and 4 described in this chart, in order to effectively obtain resources from either the company deemed responsible or from other sources, to effectively remediate environmental legacies.

Definitions under the Law

It is worth noting that the Law for MELs provides a definition (Article No. 2)[28] of the installations, effluents, emissions, remains or deposits of production residues (e.g. tailings and waste dumps), which are currently **abandoned** or **inactive** and which constitute an ongoing threat or potential risk to public health, biodiversity and ecosystems, and property. While the definition of the objects (installations, etc.) in this Article and the risks associated with mining legacies are clear and in line with definitions in other countries, the terminology for **abandoned** and **inactive components** requires further description. Lack of a detailed definition could possibly lead to misinterpretation or legal ambiguity enabling mine operators to avoid responsibility for remediation and to transfer the liability of addressing the rehabilitation of MELs to the state.

Defining abandonment is not simple. Experts in various bodies and countries have tried to come up with a concrete definition. The *Mining, Minerals and Sustainable Development Project* (MMSD), for instance, has defined an abandoned mine as follows:

[28] Artículo 2°.- Definición de los Pasivos Ambientales -
"Son considerados pasivos ambientales aquellas instalaciones, efluentes, emisiones, restos o depósitos de residuos producidos por operaciones mineras, en la actualidad abandonadas o inactivas y que constituyen un riesgo permanente y potencial para la salud de la población, el ecosistema circundante y la propiedad."

"A mine is considered abandoned if no identifiable owners exist or no operators for the installations exist or if the installations have reverted to the state"[29] However, this definition, too, lacks the precision needed for operative purposes.[30]

Consequently, the definition of "abandonment" could, according to Article 5 of the new Mining Legacies Law, transfer responsibility for the rehabilitation and remediation of environmental legacies to the government. In addition, unless sufficient financial guarantees have been secured for environmental remediation by the mining company, costs would have to be absorbed by the state. In sum, the law for addressing MELs fails to explicitly fill gaps in existing mining legislation and therefore leaves ample room for possible misinterpretation.

While there are a number of environmental legacies on government land (226, of which 13 are considered priorities of environmental concern), the majority (including 81% of priority environmental legacies), correspond to sites under current concessions. Likewise, there are a number of environmental legacies from state-owned mining companies (Centromin, Banco Minero, Minero Peru). It is worth reiterating, however, that there is not one study or thorough analysis done on the status of state-owned MELs. Thus, the severity and risk of these MELs is currently unknown.

Table 5. Concessions that are Superimposed on Environmental Legacies

Current concessions	303	57%
Expired Concessions	226	43%

Table 6. Concessions that are Superimposed on Priority Environmental Legacies

Current concessions	57	81%
Expired Concessions	13	19%

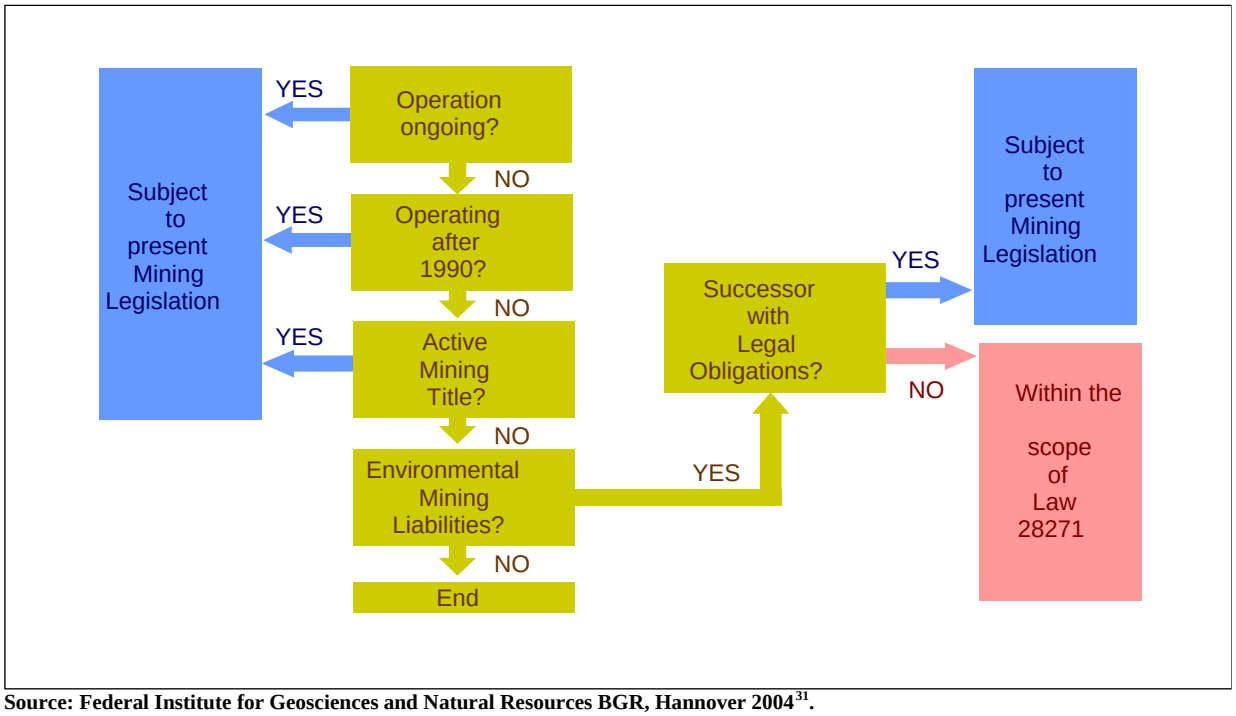
Source: J. Soldi, J. Hoyos, E. Loret de Mola

The MEL law stipulates that the technical division of the MEM will be in charge of identifying, elaborating and updating the inventory of environmental legacies, and making this information available to concession title holders. Furthermore, the law requires that MEM identify those responsible for abandoned residual deposits, works and/or installations that have led to environmental legacies. The MEM is also responsible for identifying inactive mining concessions with active mining rights that currently do not generate legacies. The MEM will also identify the owners who are still responsible for environmental legacies and who still maintain the rights to the concession. To a certain degree, these actions are already being implemented, but the MEM will require further capacity to carry out studies, and powers will have to be granted to enable it to carry out the monitoring in a systematic manner and to enforce the law for those not properly addressing their legacies. In addition, the identification of the entities responsible for abandoned MELs will only be possible in some cases. For these instances, a retroactive application of the new law would not be possible. Diagram 2 provides a possible flow of decisions in order to determine and define old abandoned mining vestiges as MELs.

[29] "A mine is considered abandoned if no proper owners or existing operators can be identified for the installations, or if the installations have reverted to the government."

[30] Article 62o.- Abandonment of the concession safeguards shall be considered grounds for establishing non-compliance by the stakeholder with mining procedure norms applicable under the concession title. According to Article 3of D.S. N° 33-94-EM of 8/07/94: " Mining lawsuits that do not have consented abandonment resolution, executed or contested by the administration or judiciary for failing to pay the demarcation, can only be declared abandoned for the causes that are referenced in Articles 62° and 151° of the Consolidated Text (*Texto Único Ordenado*) of the General Mining Law".

Diagram 2. Flowchart for Defining MELs



Source: Federal Institute for Geosciences and Natural Resources BGR, Hannover 2004[31].

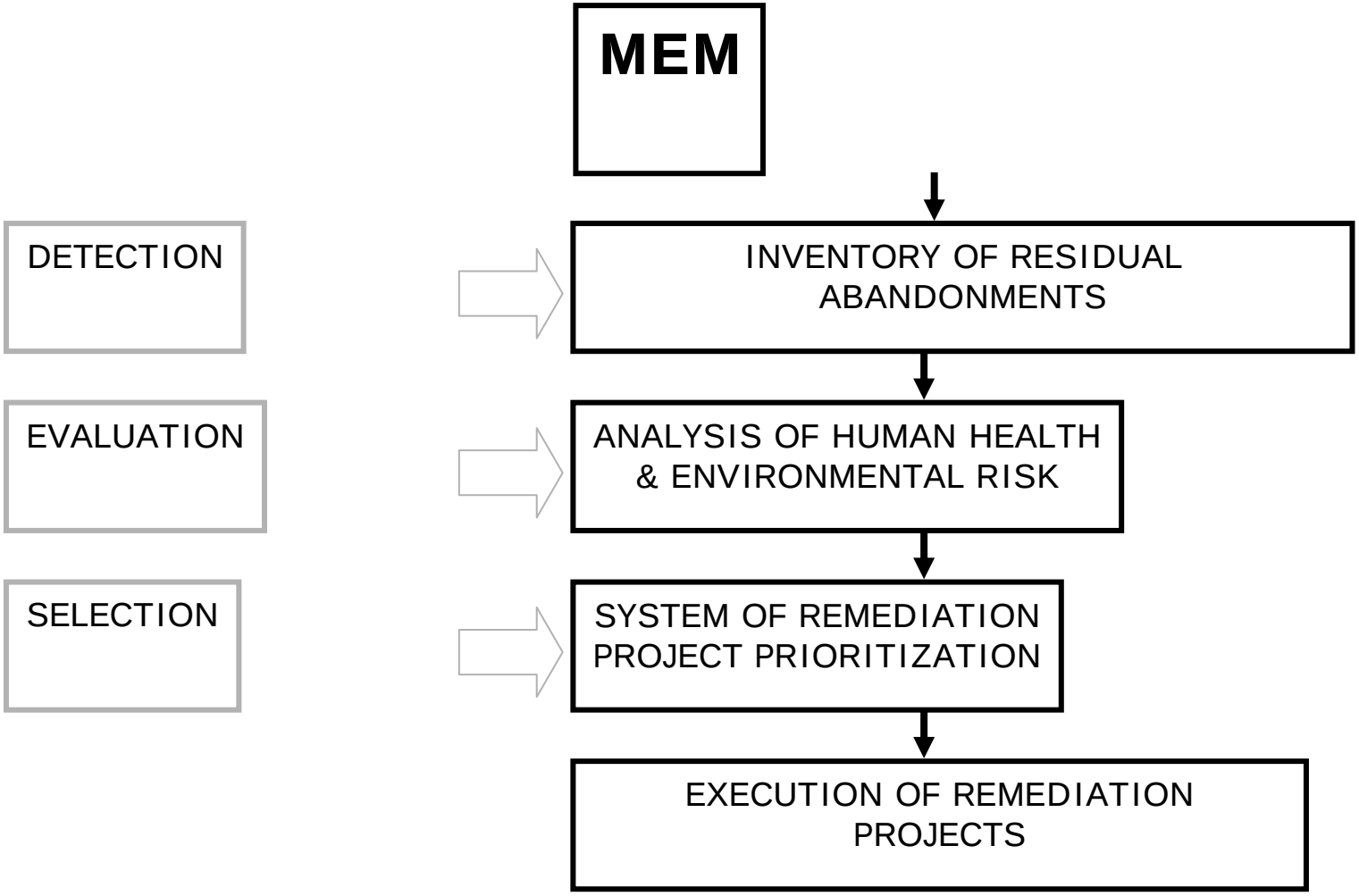
Under this scheme there are specific mining laws that would apply to operations that: (i) are ongoing; (ii) have been developed after 1990 when environmental law came into existence; and (iii) have an active mining title. This process could contribute to defining which law is applicable to a particular MEL. Diagram 3 also illustrates the expected flow of state intervention in the identification, evaluation and selection of MELs for remediation.

Responsibilities under the MEL Law

Law 28271 assigns the MEM the task of carrying out the identification, diagnosis and determination of risks under an inventory of environmental mining legacies. As explained above, while this is a task that has already been partially fulfilled through the EPA and PRODES projects, further information and analysis is required to assess the current risks and costs, and to fill data gaps. Given its expertise with ongoing mining and mines, the MEM is technically qualified to assess remediation proposals and to certify their successful implementation.

[31] Federal Institute for Geoscience and Natural Resources-BGR, (2004), *Basis for the Remediation of Environmental Mining Liabilities: an Analysis on the Present Status* (preliminary draft). Hannover.

Diagram 3. Flow of State Intervention in Remediation of Environmental Legacies



By law, concession holders responsible for environmental legacies will sign contracts for the rehabilitation and remediation with the MEM through the General Directorate of Environmental Affairs (*Dirección General de Asuntos Ambientales*-DGAA). Those found responsible for the environmental legacies will have to prepare studies and carry out works to control, mitigate and eliminate, in whatever way is possible, the risks and negative effects of the legacy, according to their remediation contract. The studies would be based on the maximum permissible levels (MPLs) as reference, and enterprises would have to present their plan within no more than one year (to be completed in no more than 3 years), according to the Guidelines approved by the DGAA.

However, as stated earlier, this is one of the flaws inherent in the recently approved law for MELs, as it opens up the opportunity for mining companies to unilaterally rescind their concessions and waive the mining right, shifting all the daunting burden and obligation of remediation and rehabilitation to the government. Consequently, the law would be undermining the "the polluter pays" principle. This action runs counter to current environmental legislation and the licensing process for mining operations, which oblige all holders of valid mining titles and concessions to comply with environmental standards and rules for mines. Hence, the MEM is currently in the process of submitting an amendment to the law which will limit potential loopholes.

In addition, limiting the role of the state in the MEL Law to addressing only the remediation of environmental legacies in areas where there are no mining titles, and where legacies were created prior to the 1990 legislation, could possibly help define the term "orphan" within the law and its application *vis-à-vis* mining operators.

FINANCING MECHANISM FOR MELS

Article 9 of the MELs Law assigns the mandate for fundraising and financing for the remediation and rehabilitation of legacies to the National Environmental Fund (*Fondo Nacional del Ambiente*-FONAM). According to the Law, resources for financing the remediation and rehabilitation of environmental legacies should come from international financial cooperation arrangements, debt swaps, and other sources, as long as public funds are not used and the national budget is not affected. While the idea of establishing a framework for the financing of orphan MELs is valid, the mechanism assigned by law requires further analysis and support in order for it to be efficient.

FONAM was created by Congress in 1997 as a non-profit institution of public and social interest, destined to promote public and private investment in projects for environmental management improvements. Thus, by nature its performance is not as limited by the restrictions and limitations that are applicable to government institutions and FONAM can create a specific fund dedicated to addressing this specific issue (it can operate as a trust fund). FONAM's key mission and strategy have, since its inception, focused on four thematic areas:

(i) energy;
(ii) transportation;
(iii) forests; and
(iv) water and solid waste.

Hence, FONAM currently does not have any technical experience of mining issues, nor any skills and expertise on financing, remediation and/or rehabilitation of environmental legacies from mining operations.

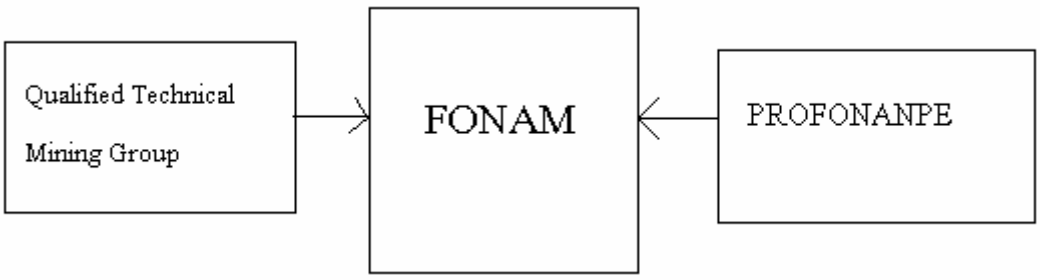
While the Law states that resources to finance the remediation and rehabilitation of MELs should come from external capital (and other sources except public funds), and that these should be channeled through FONAM (a non-profit private agency), it also claims that the state (through the MEM) ought to be responsible for addressing orphan legacies, and those where the entities choose to cancel their concessions. It is worth noting that in spite of the law, MEM has pledged close to US$1 million and three mining companies in Cajamarca have indicated their interest in contributing resources to the fund to be managed by FONAM. Another question that needs to be addressed is what would happen in the event of the bankruptcy of a mining company that leaves behind MELs.

In view of the recent decision to award the responsibility for fundraising and financing of MELs to FONAM, the following issues should be taken into account:

- Given the inherent lack of technical capacity regarding the rehabilitation and remediation of environmental legacies, FONAM should establish a partnership through an operating agreement with a group of proven technical excellence, whereby FONAM (once it has managed to raise the necessary resources) provides the funding and the selected technical group carries out the rehabilitation works. In addition, FONAM would need to build-up its technical capacity on mining issues;

- In order to strengthen its financial management and fundraising capacity to address MELs, FONAM should get technical assistance from specialized groups (national or foreign) that can provide hands-on expertise in managing environmental endowments. In Peru, for instance, an alliance could be established with the National Fund for Protected Areas –PROFONANPE, which has a known track record in expanding and managing its conservation fund. Both the technical and financial assistance can be given on a gradual basis until FONAM reaches a certain level of proficiency in this field. Likewise the MEM could enter into a contract for a specific time period (i.e. 5 years) with FONAM, to carry out the functions of financial manager and executor of the MELs. If in the pre-established time period, FONAM is unable to meet the expected outcomes (fundraise, manage funds, and execute rehabilitation of MELs), a call for proposals should be assigned to the most qualified bidder. The initial partnerships for technical and financial advice required by FONAM to operate under the new mandate as established by the MEL-Law can be seen in the following table.

Diagram 4. Building Capacity in FONAM



- It is assumed that the bulk of the funds for the rehabilitation and remediation of MELs would come from international financial cooperation arrangements. However, it is worth noting that there is not a broad base of international financial mechanisms that would support environmental legacies, and thus it does not constitute a reliable and steady source of financing that would ensure a systematic program for addressing these legacies. Mining environmental legacies are ranked low in worldwide public awareness (when compared against biodiversity conservation, air pollution, etc.). Therefore external financing may well depend on a number of criteria.

- While the enactment of the MELs Law is a sign that the Peruvian government is keen to address this issue, its willingness to assume the remediation and rehabilitation costs of orphan legacies remains in doubt. Recognizing as a national priority the growing health, environmental, and property costs associated with mining legacies and ensuring government financial commitments (rather than delegating the formidable task of fund-seeking to a non-profit organization with no experience in mining legacies), would increase the likelihood of capturing foreign financial assistance. Bluntly put, the idea that foreign donors ought to come to the rescue with donations and contributions to solve the orphan legacies problem while the state is refusing any corresponding financial commitment from one of the economically strongest sectors, would be very hard to sell. The state needs to demonstrate that the MELs represent a priority and that resources will be assigned to address this critical issue.

The study done by the Mining, Minerals and Sustainable Development Report (MSSD), illustrates the following possible allocation of assigned responsibilities by key stakeholders and sources for financial commitments. This generic scheme could be considered as a basis for comparison and possible modification to the current MELs law.

Table 7. Assignment of Responsibilities and Financial Commitments

Scenario	Responsibility
1. Old abandoned mines with no identifiable owner.	Rehabilitation through public funds.
2. Mine closed and former operator can be identified, but no longer owns the site.	Former owner could be liable, state could assume responsibility, or through agreement both operator and state share

	responsibility.
3. Mine closed but former owner still owns the site.	Owner/operator is responsible for preventing damage to neighboring properties and controlling hazards.
4. Mine is still operating.	Owner/operator is responsible through an agreed plan.
5. Operating mine early in project life.	Owner/operator is responsible through an agreed plan.
6. Permits granted but no operations have yet started.	Costs are fully internalized to the extent current scientific and technical understanding permit.
7. Mine has not yet received necessary permits.	Costs are fully internalized to the extent current scientific and technical understanding permit.

A technical cooperation between the German government (through the Federal Institute for Geosciences and Natural Resources-BGR) and the MEM resulted in a detailed analysis of the current conditions of environmental legacies and recommendations for improving the current system. Among the issues assessed was the flow of resources (and likely obstacles) to finance MELs.

Mining Financial Guarantees

Financial guarantees/sureties ensure that there will be funds to finance the closure of the mine once operations have ceased. Setting resources aside for this complex and often expensive task can help guarantee that tailings, waste deposits, and other damages will be rehabilitated, thus, preventing another generation of legacies (considering that mines often close ahead of the scheduled date or go bankrupt). Developing countries have often failed to adopt financial surety for a number of reasons. For example, many countries (Canada, Australia, and the United States) have just finished revising their laws and regulations to create incentives for investment; thus guarantees and new requirements may be regarded as a disincentive. The objective of securing a guarantee is to give the mining titleholder an incentive to comply with the execution of the closure plan in accordance with environmental standards and to ensure that the mining authority (MEM) has sufficient funds to accomplish the closure plan in the event the mining company fails to meet this obligation.

The closure plan (which is no longer developed as part of the EIA) should contain the mining enterprise's program of corrective measures and mitigation actions to avoid or reduce the potential environmental impacts on the project influence area after operations have ceased. The Mine Closure Law requires this step as a separate process. Prior coordination and private consultation between the stakeholders and the MEM is allowed in order to aid in the elaboration of a concrete plan. The plan will include a calendar of activities and list outlays for affected parties, which will include all direct and indirect costs, supervision, external enforcement, contingencies and contract utility costs as well as complementary costs (Article 8). The mining titleholder must present its closure plan to the MEM, which evaluates and approves/rejects the plan.

According to the degree of compliance with environmental obligations, accident frequency and the severity of the environmental impacts indicators, among other factors, the MEM will classify mining companies as A, B, and C; and require the following sets of guarantees:[32]

Table 8. Types of Mining Activity Guarantees

Type of Guarantee	Enterprise		
	A	B	C
I	Minimum 10%	Minimum 20%	Minimum 30%
II	Minimum 30%	Minimum 40%	Minimum 50%
III	Minimum 60%	Minimum 40%	Minimum 20%
I + II	Minimum 40%	Minimum 60%	Minimum 80%

Source: MEM

This is a mechanism which can promote better practices since it will allow those companies with a better environmental record to have lower guarantees. If the deadline for the mining enterprise to put up the guarantee is not met, the DGAA will inform the General Directorate of Mining (DGM), which will suspend the concessionary operation permits until it is verified that the guarantee has been constituted. Furthermore, any other infraction of the established regulations and environmental norms for mining will be punished according to a sliding scale of fines system.

If the mining enterprise does not fully complete its Mine Closure Plan after its mining operations cease, the MEM can pass a resolution declaring the closure plan to be incomplete and the mining company must supply the partial or total remaining amount of the mine closure guarantee within three working days of the resolution. If the funds are not received within three days, the DGM will draw and use the guarantees and security deposits to contract a specialized company to execute the incomplete mine closure plan.

However, if the mining company concludes all the rehabilitation labors set out in its plan and successfully closes its mining activities, the DGM will authorize the total release of its financial guarantees. Unfortunately, this Mine Closure Plan is still only a Draft Resolution since it has not yet been approved by MEM. Nonetheless, the passage of the mine closure financial guarantee legislature would help deter mining companies from not addressing their MELs and could also ensure that in the event of noncompliance with mine closure plans, the MEM would have sufficient resources to adequately rehabilitate the mining site.

LESSONS AND BEST PRACTICES IN ADDRESSING ENVIRONMENTAL LEGACIES

Worldwide experience with contaminated sites has shown that a systematic approach to this issue can be a long term process and, depending on the technical complexity, expensive. Some examples from mining countries may help provide information on mine management and demonstrate important strategies for embarking on the remediation of environmental legacies.

[32]MEM. Borrador de Reglamento para la Ejecución del plan de cierre en la actividad minera. March, 2004.

The East German mine closure and rehabilitation experience[33]

Valuable lessons can be drawn from the German experience of addressing legacies after reunification. Since 1900, open-pit mining of brown-coal has claimed an area of more than 1,200 square km in East Germany. By the 1970s and 1980s, mining was carried out so intensively that reclamation did not keep up with the area devastated by mining. The geological blessing - even on a world scale - of large deposits combined with general economic constraints tempted the political leaders not to give due consideration to the environment, or health and quality of life in the region. Unplanned mining after reunification exacerbated the problem, which by the early 1990s had reached unprecedented levels. The environmental damage was "inherited" by the state and needed to be addressed. There was not much published literature about how to solve problems of this complexity and scale at that time and thus reunified Germany found itself in a pioneering role in this field.

Judging by the estimated expense of draining the mines of groundwater inflows, waiting for an effective solution would have created huge additional costs. In the mines in Lusatia, drainage was costing more than US$140 million per year, which was hard to justify after the mines had closed. Hence, the Federal Ministries for Environment, Labor, and Economy and Finance, with the Governments of the four lignite producing states (*Länder*), jointly took up the responsibility for the practical part of the problem, accompanied by a major research initiative by the Federal Ministry of Research. Federal and local governments managed to allocate up to US$660 million yearly for the mine rehabilitation program.

The institutional set-up proved to be the right one for efficient implementation of the program and by 1999, the program was considered Germany's largest environmental program, leading to the following efforts in a five-year period:

- Effective measures taken to repair the damaged flow regime in the rivers and to reduce the water deficit;
- Development of cost-effective methods of neutralization of the acidity in the ground water and residual ponds;
- Implementation of safety measures on the unstable slopes in disused opencast mines and residual holes;
- Establishment of new ecosystems by revegetation to put the post-mining landscape on the path to sustainable development and the desired future land use; and
- Employment for more than 12,000 people.

The East German example served to illustrate that enormous problems occur if active mining and land reclamation are not integrated.

Some lessons can be drawn from this experience:

- The best way to tackle environmental effects is to address them early in the mining cycle; this keeps environmental impact and the required cost of repair low (in a well run German mining company, the share of remediation and reclamation in production costs is

[33] Friedrich von Bismarck. "The Costly East German Experience, (Governmental Steering and Budgeting Committee for the Rehabilitation of East-German Lignite Mines)" in: *Report on the International Round Table on Mining and the Environmen*t. Berlin, Germany, November 1999.

less than 5%); If remediation and reclamation are not integrated into the mining operations, the required technical effort (and costs) will increase quickly with time; thus, waiting worsens the environmental consequences;

- Poor environmental conduct is "contagious"; devastated unclaimed mining areas tempt others to get rid of their (toxic) waste there, exacerbating the problem;
- The cost of remediation and reclamation are at least 200% higher if the works are not integrated into the production process; and
- The public image and reputation of mining suffers severely from bad environmental conduct; it is very costly and time-consuming to improve that image.

As a positive effect of the public money spent, a highly efficient and competitive rehabilitation and reclamation industry has developed. This experience of reunified Germany shows that the question is not whether one can afford to address the environmental impacts of mining, but whether one can afford not to address such impacts in the production process.

It is also important to notice that many of the rehabilitated environmental legacies from uranium mines in East Germany have been transformed into a series of lakes for recreational purposes, ensuring a sustainable inflow of resources to the area, well after the mine has shut down. Likewise, several abandoned ancient mines have been transformed into mining museums, drawing a constant influx of tourists[34].

Box 4. Bolivian Mine Closure Legislation

As of January 2002, Bolivia was the only country in Latin America that had a specific regulation for the environmental management of mine closure and rehabilitation procedures. The regulations provide specific technical guidance on how the mine closure is to be accomplished once mining operations cease. To help ensure that the intent of the law is carried out, mining companies are required to draw up a closure plan at the initial exploration phase. As in North America, these mine closure plans must indicate the objectives of the mine closure, specify a program for achieving mine closure, and address post-closure actions (control and monitoring).

In Bolivia, mine closure and the rehabilitation of areas affected by mining exploration activities are governed by the following policy: once concession-holders or mine operators carrying out exploration activities decide to undertake operational mining activities, they must present a report on those areas that are not included in their mining operations program or project. This report must be presented no later than twelve months after the conclusion of the exploration program. Bolivia's legislation, while not specifically addressing the subject of financial warranties, does use other mechanisms to ensure that the closure plan is implemented. Three years after mine closure, an independent auditor is required to confirm that the company has implemented its closure plan. If the auditor approves the work, the company is exonerated from any further legal liability for the property.

[34] Private interview with Mr. Walther Henning and Mr. Markus Wagner of the Federal Institute for Geosciences and Natural Resources (BGR), August 2004.

Box 5. Strategies from the US Bureau of Land Management

The Bureau of Land Management (BLM) has taken on the task of remediation of the abandoned mines problem in the USA. BLM estimates that some 500,000 sites exist, making the problem so overwhelming that no previous action was taken. The BML engaged in an active outreach and awareness-raising campaign, to promote consensus on the benefits of remediation of mining legacies. This, in turn, has caught the eye of local political groups, which have seen these efforts as a way to earn the public's respect. Thus the strategy has involved showing progress measured in terms of *outcomes,* not just mere outputs. Rather than claiming credit for cleaning a determined number of sites, the communications strategy has focused on how the public and local communities have benefited from the clean up. For example, making a populated or high-use visitation area safer or restoring a watershed segment for fishing and recreation. BLM has also realized that when it comes to on-the-ground solutions, it needs to work within available physical resources, due to the prohibitively expensive costs of transporting soil or removing materials. This means finding innovative approaches to in-situ clean-up actions, applying low-cost mitigation and remediation techniques (such as signs and markers), and working on clean ups that will involve zero or low maintenance costs (such as passive water pollution treatment).

BML has also developed partnerships with other polluting sectors to share the clean-up costs. For instance, federal, state and local agencies are working together to ensure that pollutants from multiple sectors (agricultural, industrial and mining) are addressed at the same time for river valleys in California. BML's role in trying to address mercury spills for gold mining would have become quite overwhelming if the costs had not been shared with other stakeholders. BLM has found it effective to combine resources in federal and state *partnerships*. Partnership projects can often obtain the financial resources needed to address overall site conditions.

Environmental management instruments (such as the EIA and the PAMA), if properly followed, should contribute to avoiding environmental legacies. The purpose of the EIA is to establish the environmental conditions that exist around the areas of influence of the project before commencing operations, in order to evaluate the possible impacts and methods of prevention and mitigation. The EIA requires a complete evaluation and a multi-disciplinary and interdisciplinary analysis of the environmental conditions that exist in the area of the proposed project and, if necessary, proposes adequate alternatives to develop the components of the project in harmony with the relevant conditions. It is assumed that, if all project proponents adhere to a serious EIA process and carry out measures prescribed in the closure plan well before mining operations cease, environmental legacies should be properly managed and averted. Appendix 9 has more detailed information on how these instruments can help avoid MELs.

World Bank Safeguards Policies as instruments to avoid environmental legacies

The objective of the Safeguard Policies is to prevent and mitigate undue harm to people and the environment in the development of projects financed by the World Bank Group. Safeguard policies have often provided a platform for the participation of stakeholders in project design, and have been an important instrument for building ownership among local populations. The Bank safeguards will be discussed in further detail in Chapter 3. However, it is worth pointing out here that, complementary to the guidelines on how to prepare an EIA, the criteria set forth in the

Safeguard Policies could strengthen the environmental and social aspects during the preparatory, development and closure phases of a mining project, and thus help prevent the creation of legacies and their environmental, social and economic impacts.

Ensuring that, in the early stages, a mining project conducts a thorough environmental assessment and takes into consideration natural habitats, safety of dams (for tailings), involuntary resettlement, indigenous peoples, and cultural property (often not included in EIAs) could assist the process of mine closure and reduce the risk of legacies and social conflict.

In addition, the International Finance Corporation's (IFC) mining guidelines provide criteria to ensure that every mining project undertakes rehabilitation and mine closure activities in a sustainable and socially responsible manner. This plan should include reclamation of tailings deposits, waste rock deposits, any open pit areas, sedimentation basins, and abandoned mine, mill and camp sites[35]. As for the guidelines, mine reclamation plans should incorporate the following:

- Return of the land to conditions capable of supporting prior land use, equivalent uses, or other acceptable uses;
- Elimination of significant adverse effects on adjacent water resources;
- Use of waste rock for backfill and topsoil (or other acceptable materials) for reclamation to the extent feasible;
- Contouring of slopes to minimize erosion and runoff;
- Planting of native and other environmentally acceptable species of vegetation to prevent erosion and to encourage self-sustaining development of a productive ecosystem on the reclaimed land;
- Post-closure and management of mining deposits and tailings. Reduce deposit formation by sealing of pyrite containing waste from consolidation and percolating water;
- Budget and schedule for pre- and post-abandonment relocation activities; and
- Upon mine closure all shaft openings and mine adits should be sealed and secured;[36]

CONCLUSIONS AND POLICY OPTIONS FOR ADDRESSING MELS

Legislation/Regulations

While environmental legislation has steadily evolved since 1990, there are still shortcomings in the legal framework as well as in the monitoring, licensing and enforcement capacity, which need to be addressed in order to avoid loopholes. First, although mines and smelters operating in and after 1990 are subject to a comprehensive integrated set of laws and regulations, responsibility for abandoned sites and legacies prior to 1990 requires further definition and clarification in the law.

Technical Knowledge/Awareness

Second, there are numerous technical options and guidelines as to how to carry out proper rehabilitation of MELs and they could easily be made available to interested parties in charge of heading this process. Sector-specific guidance for tailings disposal, waste management, and the

[35] Environmental, Health and Safety Guidelines from the International Finance Corporation -IFC. (www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines)
[36] Middleton, John. The Approach of the International Finance Corporation to Sustainable Mine Closure. Presentation, June 7, 2004: Mining Seminar: Global Investment, Local Challenges.

use of toxic substances should be updated by MEM and methods to regulate compliance with these standards should also be developed and be required to be binding by law. Third, once enacted, the Regulation on Mine Closure will serve to further prevent future MELs by incorporating a binding methodology of estimating the costs of mine closure and requiring a closure plan. Environmental awareness in the mining industry and society has grown in recent years. However, a more active dissemination and communications campaign needs to be developed to ensure support and consensus at community and regional levels.

Need for Action

Although the MEM has developed a preliminary inventory of mining legacies through a series of projects, there are still many information gaps that need to be addressed (e.g. status of MELs of state-owned companies). Nonetheless, the Peruvian Congress has recently approved Law (No.28271), which seeks to regulate the identification and remediation of mining environmental legacies. The MELs Law, however, does not seem to take into account previous mining legislation, and the imprecise definition of MELs is likely to open legal loopholes for mine operators, enabling them to shed their responsibilities to address rehabilitation of legacies. This could potentially lead to an increase in the number of sites as well as the costs for remediation by the state. Currently, Law 28271 requires the MEM to identify those responsible for creating MELs. However, this may prove ineffective since legacies generated prior to 1990 cannot be punished retroactively under the current legal framework. Thus, the Law is contradictory since on the one hand it requires the state to assume the remediation of abandoned MELs, while on the other it exonerates the government from providing any financial commitment for this hefty task. Likewise, without any financial commitment from the state, it is unlikely that international cooperation will finance -via FONAM- the remediation of MELs. Therefore, unless consistent financial resources are available, remediation plans will be unfeasible.

Best Practices

Consequently, non-profit technical groups are beginning to emerge for possible remediation and rehabilitation of MELs. As the reunified Germany example showed, the remediation and rehabilitation process can help create jobs in areas where mining activities have stopped, and can also help develop a profitable industry specializing in remediation efforts. Therefore, local, regional, and national levels of government (including numerous agencies, such as DIGESA, CONAM, INRENA, MEF) should be involved and committed in order to successfully undertake the task of rehabilitating MELs.

Recommendations and policy options

Progress in the area of environmental legacies, abandoned mines, and mine closure faces challenges, such as: changing procedures and expectations and lack of clarity with respect to responsibilities, definitions, and the real and perceived costs of remediation and rehabilitation. In light of these development obstacles, it is important that the government take on the role of defining the rules of the game and responsibilities, and that companies be proactive in taking preventive measures in order to avoid aggravating the legacy problem.

Addressing orphan sites

While the government should first and foremost assume its own responsibility and set the example by addressing its multiple MELs from state-owned mining companies (i.e. Centromin), the rehabilitation/remediation of orphan mine sites is also an ongoing priority and should take into consideration the following guidelines:

- A diagnosis establishing the location, risks, impact on health and environment, and estimated remediation costs should be developed (currently there are many information gaps that need to be filled);
- The focus should be on 'orphan' sites, where no former owner or operator can be identified and all stakeholders would agree that the problem is a public responsibility;
- Based on the diagnosis and available studies and data, a National MELs Strategy should be developed which will determine the priority sites to be addressed, by whom, and its estimated costs;
- Priority should be given to sites where remedial action will offer a clear payoff in improved public health and safety, and reduced environmental impacts (i.e. cleaner water supplies), or other demonstrable benefits, such as protection of biodiversity;
- High priority should be given to sites where the rehabilitation of the environmental legacies will generate needed employment and skill-building, and be a source of livelihoods; and
- Based on experience from different countries, and based on the mounting health, environmental, social and property costs, local, regional and national governments have to assume a responsibility in the rehabilitation and remediation of orphan sites.

Need for further Information and Development of Corporate Image

- As stated earlier, MEM should finance the required studies and diagnosis that would complement the EPA project regarding the current status, risk, environmental and health impact, and legal condition of the country's MELs. In particular, a thorough analysis of environmental legacies' impacts on health (including costs) needs to be developed;
- In line with the preceding item, a technical audit should be carried out to determine the status of the state-owned MELs and estimate real costs for remediation. If results from the audit reveal that state-owned MELs present potential risks, state resources (whether from CENTROMIN or Banco Minero) should be diverted to remediate and rehabilitate these MELs. It would be critical for the government to launch a remediation campaign in the short term, since it would set a good example and send a message to polluters that the state is taking serious steps to begin the clean-up by addressing its own legacies;
- Create a register of companies that have failed to comply with the mine closure law, and which are avoiding addressing MELs. Those companies that have not demonstrated a commitment to remediate their legacies, and have not proceeded with an adequate closure scheme, should not be able to operate again in Peru, until they have complied with proper operations and remediation of MELs;
- Commercial banks and financing institutions should consider adhering to the Equator Principles (further developed in Chapter five under Fiscal Transparency), whereby they could refuse to provide loans and financial support to mining companies that currently have outstanding MELs, and/or are on the above-mentioned register (i.e. which have a poor environmental and social record);
- MEM should develop a structured and systematic monitoring plan/program to keep track of: (i) the risk posed by priority MELs; (ii) progress on the remediation of MELs

(whether by the state or by private operators); and (iii) potential new MELs or operators' failure to conduct adequate closure of mines. The monitoring network should not only be applied to MELs (fulfillment of PAMA and compliance with environmental standards may also be key elements of the proposed system). There should also be health criteria in the monitoring system, and other key agencies (such as DIGESA and/or CONAM) should contribute to its operation;

- Promote the establishment of technical centers of excellence, which can help guide either FONAM (in its role of financing remediation of MELs), or companies and state-owned enterprises (such as CENTROMIN) in carrying out the remediation and rehabilitation of MELs in an efficient manner.

Clarify Definition of Legacies

- The number of MELs that require rehabilitation by the state should be limited and clearly defined by law, and responsibility for the remainder should be assigned to operators.
- Amend Law 28271 by linking it explicitly to the General Mining Law (and its regulations) and to the recently approved General Law of the Environment.
- The definition of abandoned environmental legacies should make reference to those MELs that arose prior to the 1990 legislation and are located in/over areas without concession rights (this could help limit and focus state responsibilities)[37].
- The legal department within the MEM should be strengthened in order to determine whether operators can be charged via a civil law process (e.g. through damage claims against ground owner with legacies), before the state assumes the responsibility of rehabilitating their MELs.
- The MELs Law does not state what would happen to the property once a company ceases to have a concession for it.

Financial Mechanisms

In addition to the current structure based on command and control, where legal sanctions and fines are the driving force for environmental compliance, the financial structure should consider economic and market incentives. (See more on this in Chapter Five on fiscal transparency). Furthermore, as previously highlighted, remediation of abandoned MELs should not depend exclusively on international cooperation, but rather on internal resources and commitments at a local, regional, and national level. This is very important for effective environmental management.

Some specific considerations include:

- Creating a fund for rehabilitating MELs based on fines levied on mining operations for violation of environmental standards and regulations (as shown in the next chapter, fines

[37] The definition of abandoned MEL should be carefully assessed since a new concessionaire may claim that he has inherited the pollution and that he is no longer responsible for the clean up under the polluter pays principle.

for environmental infractions are rather minor.[38] Nonetheless, such a fund could be a symbolic gesture sending a positive signal);

- Creating the conditions for directing private investments and contributions by mining companies to an environmental fund for MELs. The MEF should provide tax benefits and breaks (one example of a tax break would be to take one percentage point off their royalty tax payments[39]) and public recognition to those companies that join this initiative. Mining companies might be open to the idea as part of their Corporate Social Responsibility principles, especially if they can improve not only their own institutional corporate image, but the overall damaged image of the mining sector in Peru as well. By the same token, resources set aside as guarantees by companies for future remediation purposes, could be recognized as an operational cost by the MEF.

- Developing an outreach campaign to be established and sponsored by mining operators, NGOs, and civil society[40] to convey the importance of addressing MELs at the regional and local level where: (a) there are abandoned MELs to be addressed, and (b) the regions and municipalities will receive resources from the mining canon and the royalties. Addressing old abandoned MELs should be presented as an opportunity to carry out social and environmental development investment that would help improve the health of its inhabitants, improve environmental conditions (i.e. water, vegetation), and ultimately generate jobs, further enhancing local conditions. Regions and municipalities should therefore consider the benefits of investing a percentage of their incoming royalty and canon resources and should include the remediation of MELs as part of their priority development agenda.

- In this context, a possible joint approach to addressing orphan MELs could entail matching contributions by the national government (75 percent), regions (25 percent)[41]. Municipalities affected by MELs that are due to receive royalties and canon resources may also wish to contribute to this endeavor. Furthermore, if the environmental fund is actually established, the contribution by the region and even national government could be decreased and matched accordingly by resources from the fund (This strategy will be described further in Chapter Five).

- While difficult to replicate, the German experience demonstrates that liabilities can be also transformed into financial assets. In the case of Germany, legacies were rehabilitated into recreational lakes and parks. While this may be hard in the case of Peru, where most MELs are located in isolated places at high altitudes, a study should be developed to assess those areas with potential for building a possible economic activity following remediation and rehabilitation.

[38] Approximately 2.5 million Soles (less than US$1 million) were supposed to be collected in fines during 2003. However many of these fines were annulled.

[39] While this may appear to be an appropriate incentive (i.e. provide a benefit to those companies that not only achieve adequate environmental performance, but also are willing to finance the clean-up of abandoned MELs), it may be complicated at the local and regional levels, where this may be perceived as a decision taken at the central level which lowers their royalty entitlement.

[40] The MEM and the MEF could also take part in this outreach effort. However, it could be interpreted by the regions and communities as an infringement of their decentralized sovereignty.

[41] These percentages may vary depending on possible negotiations. The values presented in this report have been based on the amounts agreed upon for the remediation of MELs in Germany after reunification.

- Financial guarantees/sureties can ensure that there will be funds to finance the closure of the mine once operations have ceased. Setting resources aside for this complex and often expensive task can help guarantee that tailings, waste deposits, and other damages will be rehabilitated, thus preventing further generation of legacies (even if the mine happens to close before schedule or goes bankrupt). Government should consider requesting "softer" guarantees from those companies that have a good track environmental and social record, and should consider the guarantee as a tax deductible item.

- In order to be able to determine if project proponents are submitting a reasonable proposal for the closure of mines, it is required that a new guide/handbook be prepared that would provide an updated methodology and guidance on how to estimate real closure costs.

Additional Incentives

- In line with efforts already undertaken by the SNMPE to promote a code of ethics, companies should develop their environmental management systems (EMS) to systematically manage environmental, social, health and safety issues. EMS could help develop an organizational structure, responsibilities and procedural controls to ensure that measures in the mine cycle are taken to prevent the generation of undesired legacies. ISO-14000 certification could also establish some operational parameters for ensuring sound environmental performance, but both EMS and ISO 14000 would only work if senior management in a company is fully committed to its implementation.

While this Chapter has highlighted the scope of the MELs problem, looked at the laws for addressing it, and extracted lessons from international experience in this field, the following Chapter delves deeper into the background to environmental legislation; examines both specific tools (such as environmental impact assessments – EIAs, environmental management and adaptation plans-PAMA, environmental audits, and licensing requirements) and the broader governance framework for the mining sector in Peru; and concludes with additional recommendations regarding environmental governance.

CHAPTER 3: ENVIRONMENTAL AND SOCIAL GOVERNANCE OF THE MINING SECTOR

The boom in the mining sector since the 1990's has consisted of an expansion in both output and in new exploration and mining exploitation projects. This growth, however, has not been matched by sound environmental and social policies, a legal framework, or the capacity required to ensure that mining activities are carried out in an environmentally and socially responsible manner. The role of the state in regulating and monitoring the environmental and social performance of new and ongoing mining operations is relatively new in Peru, since it only began to be implemented through the policy reforms of the early 1990's. Within the environmental policies of the sector, the licensing process has become the key tool for ensuring that new mining operations will be developed in compliance with environmental standards. The legal framework also includes mechanisms (such as audits and environmental management and adaptation plans - PAMA) to monitor and penalize ongoing mining activities which do not meet environmental standards. Despite these significant developments, clearly more needs to be done in order to ensure that an efficient framework is established whereby environmental impacts are minimized or controlled and monitored on an ongoing basis.

As with the challenges identified in connection with MEL rehabilitation, an overall lack of political will to devote either public or private resources to addressing environmental and social problems undermines the ability of the MEM and CONAM to govern the mining sector. The institutional framework establishes that the National Environmental Council (CONAM) is responsible for setting environmental quality standards and, by law, it should also be supervising and be involved in the resolution of conflicts between stakeholders. However, in practice, CONAM has no power to enforce compliance with environmental standards and has chosen not to intervene in environmental disputes. This section will therefore examine the current framework for environmental governance in the mining sector (with an emphasis on the licensing process), and will identify some key challenges and opportunities to improve and strengthen the current system.

BACKGROUND TO ENVIRONMENTAL LEGISLATION IN PERU

Prior to the policy and institutional reforms of the 1990's, most of the mining companies in Peru operated under the assumption that their contribution to the country and society would be limited to: (i) the development of the local economy through job creation, construction of basic infrastructure, enhancement of local markets (particularly in poor and remote areas); and (ii) fiscal contributions through taxation and payments for concessions. Very few companies addressed environmental issues (and those that did, did so in a very limited manner) during and before the eighties. The regulatory framework prior to the 1990's did not include any mechanisms that would require companies to comply with environmental or social standards or with the remediation/compensation of ecological degradation. Even foreign mining companies known to be rigorous in ensuring an adequate environmental and social performance in their countries of origin often failed to be proactive in taking specific measures that could ensure improved environmental compliance. Thus, the reforms to the institutional and legal framework governing protection of the environment in the 1990's has contributed to a gradual change in the behavior of mining companies (particularly of the large international firms and some medium-sized firms), which have taken concrete steps and invested substantial sums to improve their

environmental performance. Thus, it is worth recognizing that in the past 10 years or so, the regulatory landscape for addressing and promoting environmental compliance has improved considerably.

Environmental concerns in the mining sector began to gain importance when the Environmental and Renewable Resources Code (*Codigo del Medio Ambiente y de los Recursos Naturales*- DL 613-90– CMA) was enacted in September 1990. Prior to the passing of that law, there were few and weak regulations (i.e. DS 034-73-EM/CGM) and mechanisms to ensure mining operations would address environmental issues[42]. Mining operations were not strictly obliged to follow environmental regulations and, as such, did not require an environmental impact assessment (EIA) to obtain an operating license. Article 8 of the law established that sector authorities would be responsible for enacting sector-specific environmental procedures and regulations. As a result, the Ministry of Energy and Mines (MEM) became the agency responsible for developing environmental regulations for the mining sector, guiding environmental controls and supervision, determining which mining activities would require an EIA prior to operation, and ultimately granting an environmental license to operate. Thus, for the very first time, the code established that all activities with potential environmental effects would require an EIA and approval by the relevant sector authority. It is just recently (June 2005) that the new General Law of the Environment has come to substitute the 1990's Environmental and Renewable Resources Code.

The reforms of the 1990's contributed to the development of a regulatory framework for mining activities. The first such reform -- the mining investment promotion law *(Ley de Promoción de la Inversión Minera (D.L.708))* -- was passed in December 1991, and introduced specific requirements in the Environmental and Renewable Resources Code. This was followed by a Supreme Decree (No. 016-93-EM) regulating mining procedures and environmental protection, which established that titleholders of mining concessions that have completed the exploration stage and are planning to move on to the production stage must file an Environmental Impact Assessment (EIA) with the Ministry of Energy and Mines.

In October 1992, the Control of Mining Activities Law (No. 27474) declared that the MEM would be responsible for regulating the following activities: (i) technical operations; (ii) health and safety; (iii) environmental impacts; and (iv) oil and energy activities, through independent auditing companies.

Articles 67, 68, and 69 of the National Constitution of 1993 established the State's obligation to promote the sustainable use of natural resources and to promote the conservation of bio-diversity and protected zones through a defined environmental policy.

Another key element in the development of the environmental framework for the mining sector and the reforms of the 1990's was the implementation of the Energy and Mines Technical Assistance Loan (EMTAL) Project financed by the World Bank. This project, initiated in 1993,

[42] A supreme decree on mining safety (DS. 034-73-EM/DGM) approved in August 1973, included some environmental provisions which assign responsibility to the title holder of a mining concession for emissions of effluents, industrial wastes which could cause nuisance and/or harm to the health of the population. This decree, nonetheless, was hardly ever applied.

is credited with catalyzing many key regulatory and institutional changes that promoted sustainable practices in the mining sector.

The objectives of the EMTAL included:

a) Formulation, communication and enforcement of environmental policy and regulations for mining, hydrocarbon and energy related activities;
b) Strengthening of the General Directorate of Environmental Affairs (DGAA); and
c) Carrying out sector studies, environmental evaluations and development of an information system for informal and artisinal mining [43]

The implementation of EMTAL reflected the Peruvian Government's need and determination to address the sector crisis faced at that time (which included the paralysis of mining activities in rural areas due to terrorism, the collapse of the state-owned mining operations and the decline of investment in public enterprises due their costly and inefficient operational structure). EMTAL also helped shift sector policy toward a strategic vision for the mining sector. The changes produced by the new regulations fostering private investment paved the way for today's large scale mining projects.

In May 1993 a decree for the Regulation of Environmental Protection of Mining Activities (D.S. No. 016-93) was issued, strengthening environmental protection and management policies for mining and metallurgical operations through new sectoral environmental legislation which established: (i) the obligation to implement key instruments for environmental management; and (ii) specific environmental regulations for the sector, including guidelines for the closing of operations and the definition of the maximum permissible levels for emissions and effluents from mining and metallurgical operations.

The tools established under this decree included: (i) Environmental Management and Adaptation Plans (*Planes de Adecuación y Manejo Ambiental* – PAMA); (ii) Environmental Audits to monitor and supervise the adequate implementation of the PAMA; and (iii) Environmental Impact Assessments (these instruments will be analyzed in further detail below). Supervision of these instruments (including enforcement) was assigned to the General Directorate of Environmental Affairs (DGAA –established in 1992) and to the General Directorate of Mines in the MEM[44]. Table 9 on the following page, summarizes key environmental legislation for the mining sector.

[43] Soldi et al. *Dimensión Ambiental de la Minería en el Perú*. p. 50.
[44] Ibid.

Table 9. Environmental Laws for the Mining Sector

Year	Legislation	Description	Objective
1990	DL 613	Environmental and Renewable Resources Code	Set national environmental policy guidelines for the mining sector
1991	DL 757	Framework for the Growth of Private Investment Law	Established MEM as developer/supervisor of environmental regulations and EIAs.
1992	DS 50-92-EM	Mining Procedure Regulation Law	Companies must present EIA before beginning operations
1992	Law 27474	Enforcement of Mining Activities Law	MEM to use independent auditing companies to regulate technical operations, safety & health, environmental impacts & oil/energy activities
1993	DS 12-93-EM	Regulation for the Enforcement of Mining-Energy Activities by Third Parties	Introduced EIAs, PAMA and Environmental Audits to regulate environmental licensing
1993	DS16-93	Regulation of Environmental Protection for Mining Activities	Mandatory EIAs for new exploitation activities and 50% increases in mining operation capacity. Also introduced PAMA to raise environmental standards for current operations.
1994	Law 26410	National Environmental Council Law (CONAM)	Criteria & general guidelines, environmental quality standards, maximum permissible levels, & contamination parameters
1996	RM 011-96-EM/VMM	Ministerial Resolution to set Environmental Quality Standards and Maximum Permissible Levels of Liquid Effluents by Metallurgical Mining Activity	Approved maximum permissible liquid effluent and emission levels for metallurgical mining activities. Established monitoring control points and the frequency of checks/monitoring.
1996	RM 315-96-EM/VMM	Ministerial Resolution on Maximum Permissible Levels of Gas Emissions by Metallurgical Mining Activity	Approved maximum permissible emission levels for each chemical and concentration of the metallurgical mining activity-related gas emissions, and established the regulation protocol.
1998	DS 38-98-EM	Environmental Regulation of Mining Exploration Activities	Mandatory EA's for Exploration projects, mitigation and impact recuperation plans
2001	Law 27446	National Environmental Impact Evaluation System (SEIA)	Coordinating system for all public projects, governed by CONAM but allowing sector decision-making powers
2003	DS 42-EM	Corporate Social Behavior Act	Established framework for socially responsible corporate behavior, social obligations before receiving concession.
2004	Law 28245	National Environmental Management System Framework Law	Ensured more efficient compliance by public entities with environmental objective. CONAM strengthens trans-sector mechanisms in environmental management, and sector, regional and local entities make environmental contributions to meet their responsibilities and to avoid conflict.
2003	Law 28090	Law governing Mine Closures	Required mining operations to submit a closure plan to the MEM and provide financial guarantees for its implementation
2004	Law 28271	Law on Environmental Legacies of Mining Activities	Regulated the identification of mining environmental legacies (MELs), remediation and rehabilitation, financing mechanisms, and mitigation of negative impacts
2004	Draft Resolution	Regulation governing Execution of the Mining Activity Closure Plan	Regulates the process of closing down a mining operation after its useful life has ended.
2005	Draft approved June 23rd	General Law of the Environment	Substitutes the Environmental and Renewable Resources Code of 1990, and gives CONAM the mandate to update environmental standards.

Despite all this legislation, the current regulatory and institutional framework has not yet created a setting in which the state can adequately monitor and enforce mining regulations and ensure that mining operations (whether large, medium, small or artisinal) take specific steps to improve their social and environmental performance. In particular, the current system does not yet guarantee that mining operations adhere to strict environmental and social standards for each stage in the mining cycle. New approaches to environmental management, including economic incentives, fostering use of state-of-the-art technology, environmental management systems, and certification schemes, which are often the hallmark of mining operations in developed countries, still need to be explored and implemented in the mining sector in Peru.

THE INSTITUTIONAL STRUCTURE FOR ENVIRONMENTAL MANAGEMENT

The reforms of the 1990's laid the foundations for the institutional and legal framework for environmental management based on a sectoral approach (through environmental units mainstreamed in line ministries rather than through a centralized agency). Although the National Environmental Council (CONAM) was created in December 1994, the onus of supervising, licensing and enforcing environmental compliance for mining operations has been shouldered by the MEM[45]. In spite of the creation of the National Environmental Impact Evaluation System (SEIA) in April, 2001[46] as a coordinating system for all public projects to be governed by CONAM, each sector authority (i.e. Mining, Agriculture, and Industry) still retains key decision-making powers. These sectoral administrative roles include: (i) the classification of Environmental Impact Assessments (EIAs); (ii) the elaboration of guidelines for the preparation of EIAs and (iii) the review and approval of the EIA and the project. Consequently, each sector authority (in this case the MEM) is also responsible for granting the operating license for project proponents.

Over time, the advances in environmental management implemented by the MEM (particularly in recent years) have been quite significant and noteworthy. The MEM has established itself as a strong and effective regulator against polluters in the sector (as witnessed by the growing number of fines implemented since the year 2000[47]), and as a promoter of environmentally and socially responsible mining. Nevertheless, public perception, as captured by several reports and consultations[48] suggests that despite the progress in sectoral environmental management, the credibility of the MEM is questioned in terms of its ability to carry out environmental management functions efficiently, while also encouraging the growth of the sector.

Clearly, at present, no other agency in Peru has the technical knowledge and capacity with respect to mining and the environment that would enable it to assume the responsibilities and environmental management role presently carried out by MEM (including auditing, monitoring, enforcing and licensing). Nevertheless, the current structure has limitations, undermining the overall capability of the MEM to enforce and to carry out the licensing process (especially considering the rapid growth of the sector).

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[45] CONAM has been established as the national agency responsible for enacting environmental policies and as the coordinating entity among environmental units in key sectors.

[46] Through Law 27746

[47] See table 22 (evolution of environmental fines on mining operations) on page 97

[48] Such as reports by (i) Soldi, Hoyos, Loret de Mola; (ii) A. Bernales; (iii) WMSSD; (iv) Mining Strategies for LAC, etc..

International experience indicates that there may be benefits in sharing certain regulatory functions with regional or decentralized or environmental units that are supervised by a strong central environmental agency. In some cases, a central environmental agency could take a leading role in efficiently regulating key productive sectors (agriculture, roads, energy, tourism, mines, etc.), and provide a leading supportive role in environmental management to sectoral environmental units (which could share licensing, monitoring and enforcement tasks) by adding value to their technical expertise on the sector[49].

Table 10. Institutional Responsability Models

Chile	CONAMA is in charge of requesting, evaluating and approving the EIA for all sectors.
USA	Environmental Protection Agency in the United States grants the environmental license for large works across all sectors.
Mexico	The environmental licensing process is conducted by organizations ranging from the Secretariat for Environment and Natural Resources (SEMARNAT) to key environmental offices in certain sectors (oil and gas, water works, etc.). Nonetheless, for large and complex projects, SEMARNAT is required to provide a license.
Canada	The provinces, in coordination with the federal government, share responsibility in determining/granting the environmental license (through an agreement signed in 1998)

International experience illustrates the advantages of mainstreaming environmental concerns to sectoral ministries through environmental units (as is the case with the MEM in Peru) as long as there is a strong central environmental agency with enforcement and licensing powers. It is worth noting that a strong environmental agency or ministry (such as SEMARNAT in Mexico, the Ministry of the Environment/IBAMA in Brazil, or CONAMA in Chile) can contribute to strengthening the legitimacy of environmental issues since it has the authority to regulate and penalize branches of government that are in violation of environmental law. In addition, a strong and capable central environmental agency can help balance the responsibilities in sectoral units (or even regional or state governments) that are often short on capacity (i.e. through the screening and scoping of the EIA process) and enhance the application of environmental legislation by sharing key tasks with environmental units inside the ministries (which often possess technical know-how of the sector).

In many other countries, the central environmental authority is responsible for granting the environmental license and for supervising the overall EIA process. Table 10 above shows various responsibility models.

[49] Chile, Brazil, Mexico, Canada

KEY ACTORS

In addition to the MEM, the other key government actors involved in the environmental framework for mining in Peru include: (i) the National Council for Environment (CONAM); (ii) The National Institute for Natural Resources (INRENA) under the Ministry of Agriculture; and (iii) the General Directorate for Environmental Health (DIGESA), under the Ministry of Health.

Government

Among the government agencies, **CONAM** was created by Law 26410 on December 1994, and it reports to the President of the Council of Ministers. As the national authority for the environment, its mission involves planning, promoting, coordinating, controlling and protecting the natural heritage of the nation. The Council is composed of citizens nominated by public and private entities and appointed by the President of the Council of Ministers (Prime Minister). A key function of CONAM is to set Environmental Quality Standards (*Estándares de Calidad Ambiental*- ECA) and Maximum Permissible Levels (MPL) of emission for certain pollutant activities. These are determined by technical committees. Their recommendations include Action Plans to establish and enforce ECA and MPL at national and local levels. By law, CONAM should also be actively involved when conflicts between (and with) environmental public entities arise. However, given its limited capacity this seldom happens[50].

The National Institute for Natural Resources (**INRENA**) was created by DL Nº 25902 on November 1992[51]. Its mission is to promote and carry out the actions needed to ensure the sustainable use of renewable natural resources, conservation of biodiversity and sustainable management of the rural environment, through an integrated watershed and land use planning. INRENA is thus responsible for the management and regulation of the National System for Protected Areas, Parks, Reserves and other categories of biodiversity conservation. With regard to environmental licensing, INRENA has to emit technical opinions on projects and activities affecting renewable natural resources and their surrounding environment. INRENA is therefore required to issue its technical opinion to the MEM during the EIA review process.

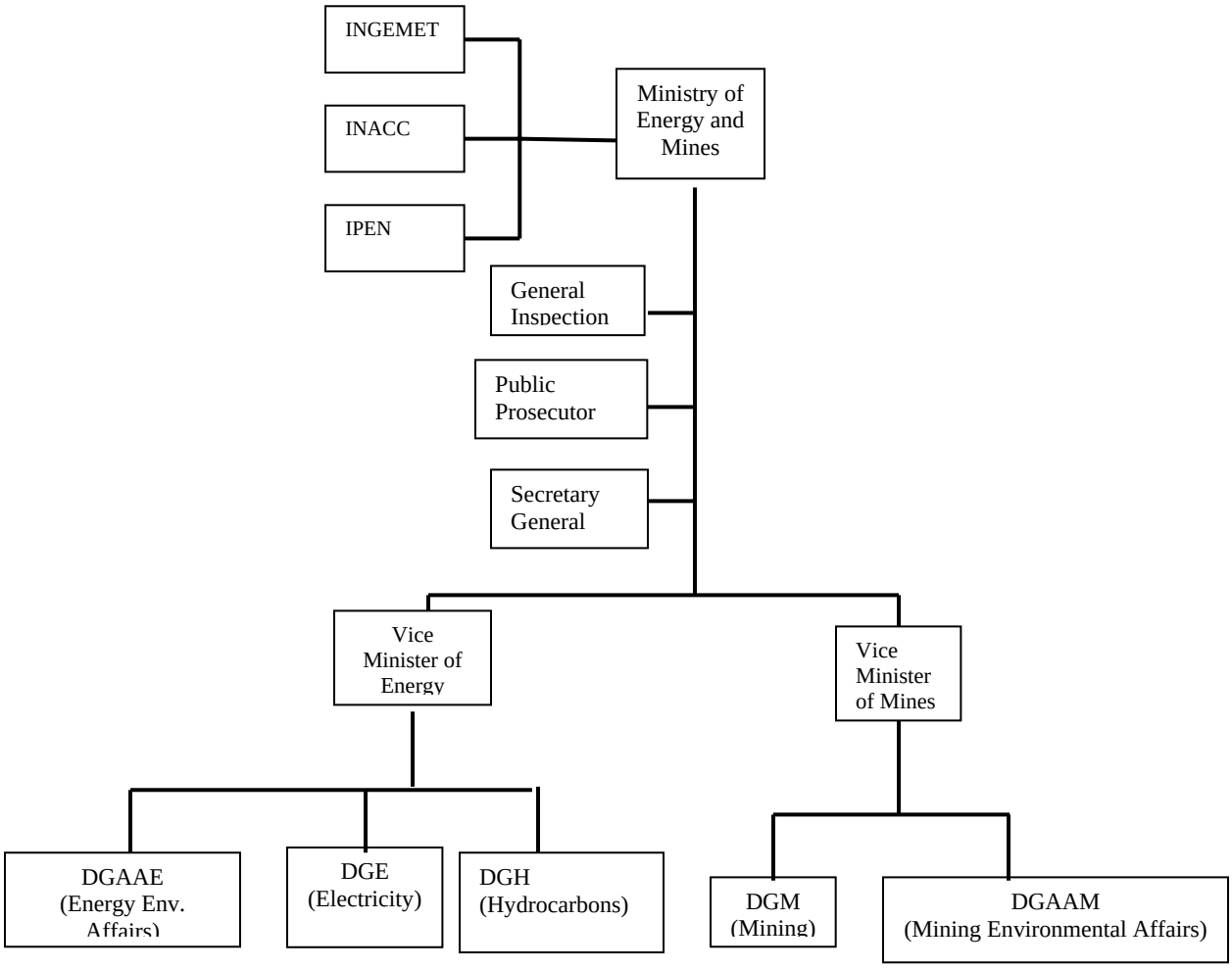
The General Directorate of Environmental Health (**DIGESA**) is responsible for issuing effluent discharge certificates and surveying water quality (rivers and beaches) for health protection. Its mandate is to oversee solid waste management activities, and review and approve sanitary landfills and other hazardous wastes.

The Structure of the MEM

The Vice-Ministry of Mines comprises the General Directorate for Mining Environmental Affairs (DGAA) and the General Directorate for Mines (DGM). The DGM supervises mining activities and environmental management and enforcement during the production phase. A key branch within the MEM is the National Institute of Mining Concessions and Cadastre (*Instituto Nacional de Concesiones y Catastro Minero* **–** INACC**)**.

[50] Antonio Bernales (2004). Environmental Licensing and Monitoring.
[51] Previously it was the National Office of Natural Resources (ONERN).

Diagram 5. Internal Structure of Peru's Ministry of Energy and Mines (MEM)



The private sector is represented by the National Society of Mining, Oil and Energy (SNMPE),[52] which supports the interests of mining companies. The SNMPE has a code of ethics, which includes environmental and safety guidelines. This code, however, is not binding and thus there is no incentive for industry to comply with it, apart from demonstrating social responsibility to the public.

Civil society groups include: (i) the Association of Communities Affected by Mining (*Asociación de municipalidades afectadas por la minería* – ANMIM); (ii) the National Coordinator of Communities Affected by Mining (*Coordinadora Nacional de Comunidades Afectadas por la*

[52] SNMPE is the leading umbrella organization representing a diversified group of local and foreign private mining companies. Its members recently adopted a Code of Ethics containing eight non-binding principles for business behavior concerning safety and environmental and social matters.

Minería - CONACAMI)[53]; (iii) NGO Labor; (iv) the Peruvian Society of Environmental Law (SPDA), and (v) NGO Cooperacción. Most of these have participated in the Mining Dialogue Forum (*Grupo de Diálogo Minero*), organized by the MEM, regional governments and civil society organizations. The most representative academic institutions include: (i) the National Geological Society; (ii) the Institute of Mining Engineers of Peru; and (iii) the Institute for Mine Safety (ISEM).

ENVIRONMENTAL MANAGEMENT AND LICENSING TOOLS

The key tools which the government has to ensure that new and ongoing mining operations adhere to environmental standards include: (i) the Environmental Impact Assessment; (ii) the Environmental Adaptation and Environmental Management – PAMA; and (iii) audits and enforcement (including inspections); and environmental monitoring. This section will also assess the effectiveness and limitations of these instruments.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The Environmental Impact Assessment could be considered one of the most important instruments in environmental management given its potential for preventing negative impacts of the mining sector. Furthermore, the EIA was developed as an administrative procedure to open up governmental decision-making processes to public participation. The EIA system in place is highly advanced in relation to much of Latin America. However, there are still some gaps that weaken its effectiveness as a governance tool.

The EIA was initially introduced in Peru through the Environmental and Renewable Resources Code in 1990[54], and specifically for the mining sector through the Regulation governing Environmental Protection for Mining Activities in 1993[55]. According to MEM regulations,[56] the EIA is a mandatory management planning tool for the evaluation of the potential impact to the environment and the well-being of communities, local cultures, society and local economic activities that would result from the different phases of a proposed mining activity. The type of operations that require an EIA include: (i) mining exploitation; (ii) mineral treatment; (iii) processing; (iv) refining and smelting; (v) ore deposits in port facilities; and (vi) general works and the transportation of wastes, chemical materials and mining products. An environmental assessment is also required (see below) if exploration activities could lead to substantial disturbances.

In principle, an EIA should determine the baseline environmental conditions within the area of influence of the project prior to the start of operations and should include the predictable direct and indirect effects of the activities on human health, plants, wildlife and ecosystems.[57]. Identifying critical issues before the start of an operation can ensure that necessary preventive and

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[53] CONACAMI is perhaps the most vocal and organized NGO with national coverage.

[54] Código del Medio Ambiente y los Recursos Naturales; Legislative Decree Nº 613 of September 8, 1990.

[55] Reglamento para la Protección Ambiental en la Actividad Minero-Metalúrgica; Supreme Decree Nº 016-93-EM of May 1, 1993, amended by Supreme Decree Nº 059-93-EM of December 13,1993, 048-2002, 056-2004.

[56] Ibid., which introduced EIAs and PAMA. DS N° 053-99-EM., which amends DS 059-93-EM, states that EIAs should follow the guidelines approved by the MEM.

[57] EIAs should also consider water resources and watersheds, socioeconomic factors, such as public recreational areas, communication systems, archeological zones, infrastructure, and relevant information concerning natural habitats, endangered species, and social and cultural conditions, etc.

mitigating measures are incorporated into project design and, through an action plan, implemented throughout the life cycle of the mine. The idea is for the EIA to be prepared through a participatory process (which would include thorough consultation and evaluation with local communities) and to develop an interdisciplinary analysis of the environmental conditions in the area of the proposed project. The EIA should also make reference to the steps required for addressing suitable mine closure (and post closure activities) to ensure the restoration of the area back to its baseline levels, and to ways to avoid future mining environmental legacies[58]. Table 11 summarizes the minimum steps which, according to the International Association for Impact Assessment (IAIA), should be undertaken in preparation for an EIA.

Table 11. EIA Procedures[59]

Process	Description
Screening	Determine whether or not a proposal should be subject to EIA and, if so, at what level of detail.
Scoping	Identify the issues and impacts that are likely to be important and establish terms of reference for EIA.
Examination of alternatives	Establish the preferred or most environmentally sound and benign option for achieving proposal objectives.
Impact analysis	Identify and predict the likely environmental, social and other related effects of the proposal.
Mitigation and impact management	Establish the measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate, incorporate these into an environmental management plan or system.
Evaluation of significance	Determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated).
Preparation of Environmental Impact Assessment (EIA) or report	Document clearly and impartially the impacts of the proposal, the proposed measures for mitigation, the significance of effects, and the concerns of the interested public and the communities affected by the proposal.
Review of the EIA	Determine whether the report meets its terms of reference, provides a satisfactory assessment of the proposal(s) and contains the information required for decision making.
Decision making	Approve or reject the proposal and establish the terms and conditions for its implementation.
Follow up -	Ensure that the terms and conditions of approval are met; monitor the impacts of development and the effectiveness of mitigation measures; strengthen future EIA applications and mitigation measures; and, where required, undertake environmental audit and process evaluation to optimize environmental management.

However, the procedures outlined above are only partially followed in Peru. Terms of reference for EIAs, as part of the scoping process, for instance, are not a requirement for the EIAs of medium or large operations.

The EIA process for the mining sector in Peru has four key phases, which include: (i) carrying out the study and preliminary consultations; (ii) submission of technical evaluations by responsible entities to the MEM; (iii) a public hearing and (iv) final approval by the MEM. There should also be a parallel public consultation process (through meetings and workshops) with the community, led by the project proponent and, ideally, starting even before the EIA process begins.[60]

[58] In the future, these are expected to be two separate processes as per the law for mine closure (interview with DGM-MEM).
[59] International Association for Impact Assessment (IAIA). Guidelines for EIAs.
[60] The public participation process is explained in greater detail below.

Depending on the area, dimension, type of proposed mining operation, and on the level or risk and impact it may generate, the DGAA assigns a specific classification (see Table 12) determining the required level of detail and depth in the preparation of the EIA.

Table 12. EA Risk Classification

Category	Required EA	Comment
I	Declaration of Impact Assessment	When limited impacts are expected (low level of exploration activities)
II	Semi-detailed EIA	For mining activities expected to have a limited impact (such as small mining activities)
III	Detailed EIA	For medium and large operations where large-scale impacts are expected.

It is worth noting that there is limited consultation between the DGAA and the DGM in the classification phase of a proposed project, and no public participation at this specific stage.

The EIA preparation and submission process

Project proponents (for large and medium operations) prepare the EIA in accordance with technical guidelines (developed by the MEM in September 1996), which specify the general criteria, expected content and standards to be considered during its preparation. Depending on the complexity of the project, specific conditions of the area and type of mining operation, the MEM (through DGAA) may request a more in-depth analysis of specific issues.[61]

The project proponent selects the consulting firm that would prepare and deliver the EIA from the MEM's list of certified firms. The review process is as follows:

- Once the MEM has received an EIA, it is made available to the public by posting it on the ministry's website (within 10 days). MEM agrees with project proponents on the place, date and agenda for the public audience (which should take place within 40 days of receipt of the EIA);
- Subsequently the DGAA begins to review the quality and soundness of the EIA. As a rule MEM shares a copy of the EIA with INRENA, which is expected to issue a technical opinion (if there are issues involving Natural Protected Areas, the review process by INRENA may take longer). In addition, depending on the complexity of the project, DGAA may request comments on the EIA from DIGESA, CONAM, the National Institute of Culture, the Port Authority, the School of Engineers, and others (according to

[61] As per Art. 22 of D.S. 016-93-EM, additional items that may be included in a detailed EIA include: (i) determination of alternatives, based on factors including costs, feasibility and implementation; (ii) assessment of probable effects on the environment; (iii) a cost-benefit analysis (on issues like value changes in ecosystems, infrastructure, quality of life; (iv) a specific contingency plan for each identified risk; (v) a detailed water quality analysis. Complementary studies are also considered such as: biological, physical and chemical analyses and tests; permanence and dilution patterns, etc.

MEM officials, these agencies seldom send comments).[62] By law, this review process can take up to 120 days;

- Comments and specific suggestions are then provided to project proponents and 90 days are granted to incorporate the requested changes;
- After receiving the last version of the EIA, the DGAA unilaterally pronounces its decision as to whether an environmental license can be granted. This decision is accordingly based on; (i) the quality of the EIA; (ii) the technical opinion of INRENA; (iii) opinions gathered during the public audience; and (iv) opinions from any interested parties submitted to MEM 30 days after the public audience[63]. DGAA can either approve or reject the EIA or it can make approval dependent on further requirements, which would need to be met in a determined time frame.

EIA and Exploration Activities

During the exploration phase, it is expected that proposals that could entail: (i) disturbance and/or replacement of more than 50 million tons of material; (ii) more than 20 perforation platforms; and (iii) more than 50 meters of dug tunnels (as per Table 13 below), would fall under category "C" and thus would be expected to prepare a preliminary or limited environmental impact assessment. The EIA for this exploratory phase, however, does not consider the potential impact to affected stakeholders. The criteria used focus on the quantity of by-products that will affect the area of exploration.[64]

Table 13. EIA and Exploration Requirements

Category	Concept	Activities	Implementation Areas	Additional Requirements
A	Activities that cause insignificant or slight alteration to the surface	Geological Studies Geophysical Studies Topographical survey Gathering of samples using hand-carried equipment	Unlimited	No authorization required
B	Causes pouring/dumping and requires waste disposal	Up to 20 drilling platforms Less than 50 meters of tunnels	Less than 10 holes	Sworn Statement indicating the intention to start a mining exploration project
C	Causes pouring/dumping and requires waste disposal	More than 20 drilling platforms Less than 50 meters of tunnels	More than 10 holes	Environmental appraisal approved by the MEM

Source: Soldi: Dimensión Ambiental de la Minería en el Perú [Environmental Dimension of Mining in Peru].

LIMITATIONS IN THE EIA PROCESS

[62] Interview with Mr. Luis Alberto Sánchez from DGAA/MEM (October 2004).

[63] Bylaw. See D.S. N^{o} 053-99-EM.

[64] Annex 2 of the Exploration Regulation. (D.S. N^{o} 038-98-EM.- 11.30.98) describes the scope of the EIA required for the exploratory phase.

The EIA process that is required for the mining sector in Peru has been evolving since it was first established in 1993 and, over time, substantial progress has been made. Nonetheless, there are a number of shortcomings in the preparation, review, and approval process that need to be addressed in order to improve the overall quality of EIAs and strengthen the overall governance and licensing framework.

Institutional Challenges

- The MEM's efforts and the progress made in recent years in managing the environmental licensing process for the mining sector still face a crucial challenge. While the MEM is the key promoter of sustainable and environmentally responsible mining, there is a perception among certain stakeholders that the MEM's efforts to strictly apply environmental standards and issuing environmental licenses to operate may be in conflict with its own mandate, which seeks the growth of the mining sector.

- In spite of MEM's efforts to make the EIA process transparent, there are misgivings among certain stakeholders (NGOs and community representatives) regarding the efficiency of the process since the key environmental agencies (with the exception of INRENA, which is actively involved, but which has technical limitations of its own) play a minor role (if any) in the overall review and approval process of an EIA[65]. Furthermore, in spite of the National Environmental Impact Evaluation System (SEIA), which grants CONAM a coordinating role in the licensing process, there is an overall lack of inter-agency cooperation and systematization in all aspects of the EIA process[66].

- Another recognized challenge is the lack of capacity at the MEM's DGAA to efficiently review, engage in the consultation process, and approve the EIAs**.** Reportedly, there are no backlogs in the processing of EIAs despite the ongoing expansion of the sector in recent years. Nonetheless, it is recognized that the overall ability to efficiently carry out a serious assessment of the EIA is limited (the team at DGAA currently comprises 6 technical staff)[67]. In addition, there is the ongoing challenge of attracting qualified people to work at the MEM when, due to the boom in mining, the private sector absorbs most of the qualified candidates.

- In addition, the review and approval process for EIAs is questioned as one lacking objectivity and neutrality, since it is ultimately up to one unit within the MEM (the General Director's Office for Environmental Affairs – DGAA) to perform this important task. While the SEIA law allows sector authorities to decide on the pertinence of consultations, including the possibility for EIA class III (detailed EIA), an ad-hoc mechanism to consult other agencies (which will be actively engaged in the review process) and regional and local governments could prove to be beneficial.

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[65] Manuel Pulgar-Vidal (1999). Actividad Minera y Comunidades: Bases para un mejor entendimiento.

[66] The SEIA was modeled after Chile's CONAMA, which plays the central role in reviewing EIAs and issuing environmental licenses. In the Peruvian case, INRENA is the only agency to issue technical opinions for the EIA review process.

[67] The review team at DGAA is composed of: (i) one hydrologist; (ii) one sociologist; (iii) one geologist; (iv) one meteorologist; (v) one environmental engineer; (vi) the general director. Interview with Mr. Luis Alberto Sánchez from DGAA/MEM (October 2004).

With regards to MEM credibility issues, there are a number of international examples (i.e. an academic review panel in Mexico and a multi-sectoral review board in Papua New Guinea), which demonstrate that instituting a board or review panel (with specific tasks and responsibilities) composed of various stakeholders and government agencies can (i) enhance the credibility of the review process; (ii) help share the burden of EIA assessment in instances where there is limited capacity; and (iii) validate the final decision to grant the environmental license to operate. While there is a risk that a review panel can become overly bureaucratic and inefficient, experience has demonstrated that, provided the panel's participants have clear rules and responsibilities, it can contribute to enhancing the review and approval process.

In the case of the San Javier mine in the state of San Luis Potosí, Mexico, a largely academic technical committee was formed at the behest of the State Governor to review the EIA, identify key issues, and deliver a technical opinion.[68] This technical committee served to challenge EIA processes which did not meet the required standards and opened up channels for direct negotiation on management plans and legal procedures (if needed). In the case of the Still Water Mining Company in Montana, the review committee determined that companies should pay taxes in advance to compensate increased municipal costs due to impacts on water quality and environmental management. Ultimately, these commitments were included and defined in the EIA's management plan.[69]

Box 6. Papua New Guinea's Environmental Licensing and Management Approach[70]

The government of Papua New Guinea has developed environmental protection requirements and monitoring procedures for the mining sector, including specific provisions for the review and approval of EIAs. These are contained in project development agreements that are negotiated between the project sponsor and the government. The project licensing and approval process also includes a decision-making "forum" involving the developer, impacted communities ("landowners"), and all relevant government departments. The process results in a high degree of information disclosure and consultation between the developer and the people affected by the project.

Thus, the government has created a "one stop" approval process, convenient not only for the developer but also more manageable for government departments, which typically have very modest budgets, capacity and resources for reviewing EIAs of large projects. The process enables social and environmental issues to be closely integrated at the approval stage. Furthermore, a review of the mining sector conducted by independent consultants indicates that mining projects subject to these arrangements have a generally satisfactory environmental performance. In Peru, the General Director of Mining Environmental Affairs of the Ministry of Energy and Mines (DGAA/MEM) can unilaterally approve the mining company's EIA and grant the environmental operation license without requiring outside EIA review. This lack of objectivity and neutrality has led to mistrust of the system by civil society. Thus, adopting New Guinea's multi-stakeholder approach for the approving of mining company EIAs and concession licenses could greatly increase the credibility and acceptance of the Peruvian licensing process and also reduce the conflicts generated by the unilateral system in Peru.

Shortcomings of the Guide for the Preparation of EIAs

[68] Manuel Pulgar Vidal and Adriana Aurazo, Editors. Op cit. p. 162.
[69] Manuel Pulgar Vidal and Adriana Aurazo, Editors. Op cit. P. 142
[70] World Bank Group and International Finance Corporation, 2002. "An Asset for Competitiveness: Sound Environmental Management in Mining Countries". Mining and Development. Global Mining.

EIAs for mining operations are required by law. However, the criteria used in their preparation are not legally binding. In 1996 the MEM produced its *Guide for the Preparation of Environmental Impact Assessments* to provide terms of reference for project proponents[71]. The "guide" specifies in general terms the contents and criteria that ought to be considered for large and medium projects (category III), as well as for semi-detailed EIAs (category II). Consultant companies[72] subcontracted to conduct EIAs may be compelled to follow the structure proposed in the Guide, as it reflects mining ministry policy, but they are not obliged to adhere to the suggested contents. Thus, in practice, not all aspects of the Guide are reflected in the elaboration of an EIA.

Since the Guide is not binding by law, it is ultimately up to the mining company (and/or to the consulting firm) to decide on the substance and conceptual framework, depth of analysis, and issues that the EIA will cover and whether or not it will adhere to the MEM's recommended set of criteria. This means that the quality of EIAs cannot necessarily be guaranteed. While the MEM has the power not to approve an EIA that does not comply with minimum standards, there is often pressure to approve EIAs (mounting demands to avoid backlogs, the urgency of starting a large investment for the country, etc.) and to move ahead with the mining operation.
The EIA Guide does not require that ecological functions be discussed in depth by a project proponent, and the Guide does not distinguish between possible different geographical conditions and specific elements that ought to be considered as the area of influence. Biodiversity and natural habitats (which are not extensively protected by existing Peruvian legislation) are inadequately addressed in the preparation of EIAs[73]. As a result, EIAs include lists of species, rather than a comprehensive description of ecological processes and ecosystem dynamics (like periodic migration patterns).

In addition, since extractive activities are allowed in protected areas (with the approval of INRENA and with the exception of National Parks and Sanctuaries), there should be clearly defined precautionary measure requirements and mitigation strategies to minimize impact in these areas. Furthermore, since protected area master plans have a limited impact on buffer zones, the areas that separate natural reserves from more developed or inhabited areas, there might be ambiguity as to the approach and depth needed in the EIA preparation concerning impacts in these buffer areas. There is no regulation of land use planning, which increases the risk to critical local natural habitats and biodiversity and affects quality of life. National legislation also insufficiently addresses habitat conversion that may occur as a result of open pits and dam construction.

Given its generic nature, the MEM produced a more detailed version of the Guide in 2001 (based on Canadian law, but which has not yet been published), which provides complementary criteria for certain parameters (such as water and air quality), but still leaves out key issues, including those just mentioned. There continues to be a lack of definition as to the coverage, dimension and scope of the EIA, and of what constitutes a direct and indirect area of influence.

[71] The Guide draws on multiple documents from EPA (some dating from 1976 to 1988,and the World Bank's Environment Assessment Sourcebook of 1991)
[72] There are currently 119 consultant companies certified by the MEM for carrying out EIAs in the mining sector.
[73] Biodiversity requirements are mainly through a species list and a description of natural habitats to be affected.

The generic quality of the Guide and the fact that its criteria are not binding lead to shortcomings in the quality of EIAs and impair their potential use as environmental management instruments. As a consequence, there are cases, like Minera Antamina, which successfully completed its EIA and was granted a license to operate, but nonetheless, is still engaged in trying to define the area of influence in a multi-stakeholder approach with the district and provincial mayors of Ancash and Lima.[74]

Another problem has to do with the information required to construct a baseline, because the data are either not official or difficult to obtain, so that secondary (and outdated) sources are often used. Baseline information required (and thus collected) for key issues, such as biodiversity, often ends up being superficial. The tendency is for the studies to focus more on description of the problems and projected impacts than on prescriptions. Studies may also be deficient in the identification of effective mechanisms for mitigating adverse environmental impacts, and effective compensation mechanisms. In addition, environmental management plans developed in EIAs seldom specify concrete follow-up actions and realistic budgets, timetables or specific responsibilities for mitigating adverse environmental impacts. On the social side, most of the EIAs contain limited baseline information and eschew in-depth institutional and stakeholder analysis. Consequently, Community Relations Plans are weak and are a potential source of conflicts during the implementation phase of projects.[75]

Furthermore, the EIA system has been developed as a preventive tool based on a "command and control" approach rather than on economic incentives and market-based instruments, which could induce positive social corporate behavior and commitment from the mining companies.

Social Factors in Impact Assessment

The EIA process requires a systematic and complementary approach that includes the social dimension as a part of the environmental management system. However, the law that created the National Environmental Impact Evaluation System fails to refer explicitly to social aspects or ideas for regulation or impact prevention. In addition, possible changes to the social dimension throughout the course of mining activity are not clearly or thoroughly addressed. Consequently, the indirect and accumulated impacts on the socio-economic situation, demographics, public health, social differentiation and structure, lifestyles and culture are barely discussed.

Likewise, the EIA Guide does not make reference to possible tools or a methodology for analysis. It recognizes the scarcity of information and comparative criteria available for estimating expected changes to land value, and recommends only a qualitative description of uses and values. A similarly superficial approach is recommended for addressing labor issues: the Guide suggests analyzing current labor conditions and training opportunities, but does not mention the phasing out of temporary workers over the life cycle of the mine or possible negative impacts on the local communities of immigration to these mining areas.

Social dimensions have become widely recognized as a crucial element of the impact assessment exercise. Many countries require a separate Social Impact Analysis (SIA) to accompany and complement the EIA. The advantage of this approach is that two intricately related issues are evaluated in an integrated manner. The Exploration and Production Forum and the International

[75] Antonio Bernales (2004) Environmental Licensing and Monitoring.

Association for Impact Assessment (IAIA) recently reviewed their guidelines for social impact assessment as a component of an EIA and underlined the importance of incorporating cultural and social aspects in the overall impact assessment equation[76].

Citizen participation/consultation in the preparation of EIAs

Public participation should also be an integral part of the EIA process[77]. The EIA requires a thorough participatory consultation and evaluation process as well as an interdisciplinary analysis of the environmental conditions in the area of the proposed project. The key characteristics (and limitations) of these processes are explained below:

a) Prior Consultations are carried out through workshops organized by the MEM (DGAA and DREM) in order to exchange information and learn from the mining project proponents. According to the magnitude/nature of the proposal, the following conditions might apply:

- Before EIAs are undertaken, the MEM may hold informative meetings within the project's zone of influence to inform the inhabitants of: their rights and duties as citizens, applicable environmental legislation, and the technology to be applied in the project. It is considered best practice for companies to begin consultations with communities prior to the exploration phase;
- During the elaboration of environmental studies, the project proponents share information about the project with the local population. Afterwards, the proponent consults with the community to collect information, which will be included in the studies. The government should ensure that the population is well informed of the corresponding legal framework applicable to the proposed project;
- Once the EIA has been presented to the MEM, project proponents may be required to explain the components and conclusions of the study to all involved parties (depending on each case and the outcome of the study). This presentation would illustrate the possible social, cultural and environmental impacts of the project. The plans for the environmental management and community relations/strategies aimed at controlling and managing identified changes and impacts will be shared with the parties. Project sponsors will also receive inputs and questions, which should be adequately addressed.

b) Public Hearings (*Audiencias Públicas*), which were established by ministerial resolution N°596-2002 EM/DM, are a part of the procedure for approving the EIA. They are meetings open to the public to explain and discuss the findings of the EIA. The Public Hearing is announced in a national newspaper (*El Peruano*, the government gazette) and by radio. The MEM determines the consultation and type of dialogue that project proponents should have with affected

[76] IAIA recognizes that SIA is much more than the prediction step within an environmental assessment framework. Social impacts are much broader than the limited issues often considered in EIAs. A limited view of SIAs creates demarcation problems about what social impacts are to be identified by a SIA and which are to be identified and discussed by related fields such as health impact assessment, cultural impact assessment, heritage impact assessment, aesthetic impact assessment, or gender impact assessment. The SIA community of practitioners considers that all issues that affect people, directly or indirectly, are pertinent to social impact assessment. IAIA: Social Impact Assessment: International Principles, Special Publication Series No. 2, May 2003.

[77] The Code of Environment and Natural Resources specifies that citizens have the right to access information and to intervene in the definition of environmental and social protection policies. Thus, the regulation on "Public Consultation and Citizen Participation for and in the Procedures for the Approval of Environmental Studies" was passed in 2002, requiring active involvement by interested groups in the approval of the licensing process.

individuals, community representatives, social organizations, and other concerned stakeholders about relevant issues, including potential impacts and conflicts. Law 27746 states that the Public Hearing procedure is only obligatory for detailed EIAs. Therefore, all projects with significant social and environmental impacts are required to present their EIAs to the affected communities.

Limitations

Citizen participation under the consultation procedures of the EIA has been an evolving practice. There is a growing environmental consciousness and interest among affected communities concerning the importance of incorporating different points of view regarding undesired impacts from mining operations. There are, however, certain risks and shortcomings associated with public consultations:

- There are associated monetary costs, related to research and in convening the public;
- Extra time and resources are required to manage the consultation process;
- There are costs from delays and/or uncertainty that may arise from dealing with issues raised during consultation. Building these into the schedule of project activities may be difficult. Moreover, it is not possible—or desirable—for the proponents of a project to retain complete control of the consultation process. Once it is underway, comments by special interest groups, whether justified or not, are among the wide range of factors that may take the process down unanticipated paths (often for political reasons). Conflicts of interest may arise that prove difficult and costly to reconcile or cannot be addressed within the scope of the project[78].

Such risks and their cost implications can be minimized, but never entirely eliminated, by careful preparation and management of the consultation process. [79] Furthermore, these risks are thought to be smaller than the risk of ignoring the need for consultation, which could lead to social conflict later on.

The responsibility and role of the private and public sector is a key issue for the consultation process. When a company enters a community, it confronts expectations and fears that may not be based on current realities. Uncertainty and communication gaps contribute to a more difficult process. Often the public and private sector do not work together or proactively to consult with communities and avoid conflict.

While the original intentions may be sound, there is general consensus that **the public hearing process** is inefficient and flawed. While the intention of this practice is to promote public participation and trust, often the outcome of these meetings is confusion and mistrust. The key limitations involve:

(a) The absence of restrictions on attendance. This often leads to uncontrollable numbers of people at the meetings, many of whom come from very distant regions with no relation to the mining activity, often with personal or ulterior political motives;

[78] Mejorando la Participación Ciudadana en el Proceso de Evaluación de Impacto Ambiental en Minería. Manuel Pulgar Vidal and Adriana Aurazo, Editors. Lima 2003. p. 24

[79] Environmental Assessment Source Book Update. Public Consultation in the EA Process: A Strategic Approach. Environment Department. The World Bank. May 1999.

(b) The danger that one group will capture the process and assume a veto power or use their role in the approval process to extract maximum individual benefits; and
(c) Inability, under such circumstances, to conduct a productive discussion of the EIA agenda. Consequently, it is difficult to obtain representative inputs from the respective community or region.

As a result, companies fear the potential outcomes of the public hearing process (which often is biased and subjective) and would prefer to avoid it if possible. The MEM also recognizes that, in its current form, a public hearing may be an inefficient requirement. Therefore, reforms such as limiting the number of people who attend the meetings to only those in the area affected by the mining activity, having an honest brokerage institution lead and mediate the discussion, and adhering to a semi-structured public hearing agenda could help make the public hearing process much more productive.

EIA-Licensing Best Practices

Alto Chicama's EIA is considered a best practice by the Ministry of Energy and Mines (MEM) for a number of different reasons. First of all, Alto Chicama's EIA was prepared using well known international standards. The social and environmental baselines were extensive and included four river basins near the project. The potential impacts were evaluated utilizing quantitative and qualitative data about actual environmental conditions. In addition, prediction tools and quantitative methods were applied to quantitatively estimate the future environmental conditions (modeling). Detailed environmental management plans were prepared and included in the final EIA document.

As part of the process of citizen participation, forty workshops were conducted in three rounds with the populations and cities of the region. The local authorities were included from the beginning in seven EIA preparation meetings and contributions from the population and authorities were also taken into account. In addition, two public hearings were conducted, the most recent in Huamachuco, which was attended by more than 4000 people.

The Alto Chicama project EIA was made available to the population in photocopies, a complete digital copy was put on the MEM website, and more than 100 CDs with complete copies of the EIA were made. These CDs obtain an interactive version of the EIA that permits figures, tables and sections to be easily located, facilitating its reading. Furthermore, these CDs were distributed among the different interest groups, including NGOs, universities and professional colleagues. See Box 7 below for more details.

Box 7. Alto Chicama's Environmental Impact Assessment (EIA)

On April 2, 2004, Alto Chicama's EIA was approved, allowing Barrick Gold to begin the mine licensing process. It is considered a Good Practice for mining EIAs due to its social and environmental impact considerations and its proposed mitigation program.

First of all, the Alto Chicama project plans to employ local workers within the mining concession's area of influence through its *Non-Skilled and Semi-Skilled* employment program. In order to mitigate the traditional economic organization and social network losses due to the potential over-dependency of communities on mining employment, which can be detrimental after mine closure, the employment program will be temporary. This means monetary income will be seasonal, allowing inhabitant's time to

continue practicing traditional activities. In addition, the rotating employment scheme will ensure that labor benefits are extended to a larger number of inhabitants in the concession area.

On a different note, the *Land Acquisition and Relocation Program* is designed to guarantee that families are not harmed by the mining project. In this respect, Barrick Gold has initiated activities to help these families develop alternative income generating activities that replace the lost income. Those relocated inhabitants who are employed by the mining project will be employed year round as opposed to the rotating schedule.

Furthermore, Barrick's *local procurement program* aims to increase economic benefits for local residents by taking into account the guidelines contained in the *Community Relations Plan* and buying local products and services. The process also includes providing information to local businesses, providers and interest groups about the project's requirements and an explanation about the quality standards demanded by the project. In addition, the *Social Development Program* (PDS) is oriented to generating sustainable social investment in cooperative projects in the mining concession's sphere of influence. The objective is to obtain lasting benefits for the indirect area of influence, which will depend on the participation, leadership, and resources of all stakeholders. After consultation with local interest groups, priority was given to education, health and productive development programs.[80]

Lastly, Barrick incorporated methods for mitigating potential environmental impacts on the landscape and has also included restoration, rehabilitation and revegetation measures in its EIA.[81]

Best Practices in Public Consultation

Early stakeholder consultation needs to be promoted by the central authority (in this case the MEM) and regional government(s) in the context of decentralization. A public hearing in the scoping phase should complement an initial information phase conducted by Peruvian authorities. This was the case in the Las Bambas and Bayovár phosphate mines, where a team led by *Pro-Inversion* reached agreements early on with local communities, prior to the mining concession process.

Regarding public hearings, lessons learnt from the San Luis Potosí, Mexico case referred to above illustrate how local universities can facilitate the participation of an independent panel in the review stage of the EIA, playing a key role in public awareness, and serving as a technical sounding board. Furthermore, several case studies in Canada (e.g., Placer Dome) have demonstrated that early engagement between the community and the mining company instilled trust among stakeholders and showed that this cooperation can lead to a healthy working relationship when trust is built up from the offset.

In Peru, the manufacturing sector has published a Guide called "Citizen Participation for Environmental Protection in the Manufacturing Industry", in order to facilitate the EIA process. The mining sector has no such Guide, but could apply some of its principles.

[80] "EIA Proyecto Alto Chicama. Minera Barrick Misquichilca S.A. Respuestas a Observaciones": Observations by the National Institute of Natural Resources (INRENA). February 2004.
[81] See Appendix 3 for more details

THE WORLD BANK SAFEGUARDS POLICIES AND STRATEGIC ENVIRONMENTAL ASSESSMENT AS A COMPLEMENT TO THE EIA PROCESS

The World Bank Safeguards policies (designed for borrowers of World Bank Group financing) could serve as guiding principles to complement technical gaps currently encountered in the MEM's Guide for the preparation of EIAs. The World Bank Safeguard policies provide a comprehensive mechanism for integrating environmental and social concerns into development decision making. They constitute a framework for development projects that are bound to have social and/or environmental repercussions to be developed within strict norms, as well as analysis for addressing and mitigating their potential impacts. Thus, the advantage of using the safeguards to complement the EIA guides would be that they provide the conceptual framework (including specific guidance on how to approach public consultation, disclosure, institutional capacity, etc.) that the Peruvian EIA Guide lacks.

In recent years, the Bank's safeguards have been revised and enhanced to better address potential impacts from infrastructure projects, and they have become internationally recognized and accepted as guiding principles for infrastructure (including mining) projects.[82] Likewise, the WBG's *Pollution Prevention and Abatement Handbook* describes mitigation measures and acceptable levels for emissions and discharges, which can enrich the parameters required in the preparation of EIAs. Box 8 lists the safeguards that are applicable to mining activities.

[82] Proceedings of the International Association for Impact Assessment (IAIA) workshop in Vancouver, Canada (2004).

Box 8. Environmental and Social Policies, Procedures and Guidelines Relevant to Mining

Bank environmental and social policies and procedures are applicable to mining projects considered for financing by the World Bank. International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) that follow procedures that are fully consistent with these:

OP 4.01 Environmental Assessment (to be issued as OP/BP/GP 4.01): Policy and procedures for EA, whereby potential impacts are taken into account in selecting, siting, planning, and designing projects.

OP/BP 4.04 Natural Habitats: Policy to support the protection, maintenance and rehabilitation of natural habitats. The Bank does not finance projects that involve the conversion of designated critical natural habitats.

OP 4.37 Safety of Dams: In light of the serious consequences if a dam does not function properly or fails, this policy considers that for the life of any dam (including tailings from mining), the owner has full responsibility for the safety of the dam, irrespective of its funding sources or construction status.

GP 4.11 Cultural Property/Heritage: The Bank's general policy regarding cultural properties is to assist in their preservation and avoid significant damage or elimination of irreplaceable cultural property.

OD 4.20 Indigenous Peoples: Policy to ensure that indigenous peoples benefit from development projects, and that projects' potentially adverse effects are avoided or mitigated.

OD 4.30 Involuntary resettlement (to be issued as OP/BP/GP 4.12): Policy and Procedures on Bank staff and borrower responsibilities towards displaced persons in operations involving involuntary resettlement.

Strategic Environmental Assessment (SEA)

In the medium to long run, the EIA process could be complemented by Strategic Environmental Assessment (SEA) of policies and programs in the mining sector. The SEA which has a holistic and comprehensive view of the proposed policies in the sector go beyond the sphere of environmental impacts at the project site (includes an integrated approach to development, social, and sectoral issues). SEAs can currently serve to enhance and complement the framework of EIAs, which are more focused at the local level, and can take into account the accumulative impacts, and regional impacts of large (and/or aggregate) mining operations. In some countries, the SEA is providing a useful complement to the EIA (South Africa, United States, and Canada).

A nexus between EIAs and SEAs has been documented in different studies, which find them especially useful for evaluating the cumulative regional effects of small and related projects in areas with special values and sensitive to environmental pressures (such as the Lower Urubamba and Paracas); and for adopting an ecosystem approach to the definition and assessment of risks due to potential changes, etc.[83] Thus, the current framework for EIA could be strengthened by adopting some of the conceptual criteria which characterize the SEA, and which are seldomly omitted from the EIA process including: (i) a regional scope beyond the direct area of influence of the mining project (i.e. some of the emissions can travel great distances); (iii) additional criteria and sectors in its evaluation (economic, social, gender, etc.); and (iii) a cumulative impact analysis.

[83] Rodrigo Filiberto and Manuel Álvares Arenas: Editors. Evaluación Ambiental Estratégica de Políticas, Planes y Programas. Una aproximación Analítica, p. 19.

A study conducted in the United States on the benefits and costs of SEA approach concludes that SEAs:[84]

a) Entail a systematic revision of relevant environmental issues;
b) Enhance the strategic concepts involved in Policy, Planning and Programming (PPP);
c) Provide a better understanding of potential environmental effects;
d) Enhance the contribution of PPP in sustainability objectives;
e) Provide a balance and trade-off of environmental, social and economic factors;
f) Can simplify and focus the EIA process and, in some cases, facilitate the decision making process (when projects are included within the framework of PPP);
g) Increase transparency in the preparation of plans and improve consensus building for alternatives or strategy selection;
h) Provide guidelines and directions to develop effect mitigation and reduction proposals;
i) Help to define environmental objectives for information systems;
j) Allow the identification and management of cumulative effects in early planning stages.

Box 9. Best Practice: Canada's Strategic Environmental Assessment Policy (SEA)

In Canada, at the federal level, the application of EA principles to decision-making has been ongoing since the late 1980s. In 1995, the Commissioner of the Environment and Sustainable Development, Canada's environmental auditor general, was created to ensure integrated decision making and a comprehensive national environmental policy. Guidelines for implementing a 1999 Cabinet Directive on *Strategic Environmental Assessment (SEA)* has recently been published (CEAA 2000) to provide clear direction to federal departments and agencies on SEA at the federal level. In January of 2004, reforms were made to improve SEA transparency, so that all federal departments and agencies must prepare public statements of environmental effects when detailed SEA assessments have been conducted, to ensure stakeholders and the public that environmental factors have been appropriately considered in the decision-making process. It has been announced that a multi-stakeholder qualified committee will now review the SEA[85]. The Canadian Directive states that an SEA must be conducted when: (i) a policy proposal is submitted to an individual minister or Cabinet for approval; and (ii) implementation of the proposed policy or government program may result in important environmental effects, either positive or negative.

If the preliminary scan of the Policy, Planning and Programming (PPP) reveals a high potential for environmental impacts, or a high level of risk, a more detailed analysis of the environmental effects must be conducted. This secondary analysis should address: (i) the scope and nature of likely environmental effects; (ii) the need for mitigation to reduce or eliminate adverse effects; (iii) the scope and nature of residual effects; (iv) follow-up; and (v) public and stakeholder concerns. The SEA should also contribute to the development of PPP on an equal basis with economic or social analysis[86]. The Cabinet also identified several guiding principles:

1. Early integration
2. Examination of alternatives

[84] European Commission, 1966-2. Quoted in Rodrigo Filiberto and Manuel Álvares Arenas: Editors. Evaluación Ambiental Estratégica de Políticas, Planes y Programas. Una aproximación Analítica, p.28.
[85] "Strategic Environmental Assessment in the Government of Canada: Recent Developments & Future Directions". 2004
[86] Kjorven, Olav and Henrik Lindhjem, 2002, Strategic Environmental Assessment in World Bank Operations: Experience to Date – Future Potential. World Bank Group

3. Flexibility
4. Self-assessment
5. Appropriate levels of analysis
6. Accountability, and
7. Use of existing mechanisms

However, guidelines for SEAs do not provide rigid requirements and federal departments are encouraged to work within the broad framework to adapt SEAs to fit their individual needs. For example, Impact Assessments have been adapted and made an integral part of Canadian Uranium Mining development. The Saskatchewan Environmental Assessment Act was passed in 1980, and the resulting EA evolved into a more focused process, which included public consultation. Issues of worker health and safety, environmental protection, local participation and benefits, and environmental rehabilitation were all addressed during the mine development process. Ventilation systems, lead flooring platforms, graded flooring for easy clean-up, underground processing, and remote loading/unloading were installed to ensure worker safety. Furthermore, environmental protection measures such as tailings management were promoted (McClean Lake) to meet operational safety, underwater deposition, dewatering and long-term disposal EA goals[87]. Thus, the SEA could serve as a general framework that can be tailored to the individual needs of the mining sector in Peru, taking into account both the environmental and social impacts of mining activities and promoting safe environmental and workings conditions, as seen in Canada.

Diagram 6 illustrates the overlapping areas between the social and environmental field that are addressed under the SEA.

Diagram 6. Strategic Environmental Assessment Framework

[87] Vance, Robert and Sharon Baillie-Malo, 2004. "Impact Assessment and Sustainable Development in Canadian Uranium Mining". Natural Resources Canada.

CONCLUSIONS AND RECOMMENDATIONS ON THE EIA

The EIA process for the mining sector in Peru suffers from a number of shortcomings. If these are corrected, the EIA process could serve as an important instrument for strengthening the capacity of the MEM and other institutions to address environmental and social issues and to ensure that mitigation measures are contemplated for each cycle of the mining operation.

With respect to the institutional framework, there are issues concerning the perception that MEM, as a promoter of mining activities, is inhibited in conducting an unbiased environmental licensing process. Some possible structural reforms have been suggested to address this issue, including strengthening CONAM and giving it powers to carry out licensing and enforcement tasks, or establishing a central agency with ministerial powers over all agencies working on environmental issues, in order to: (i) share the burden and responsibility of carrying out this task among key agencies; and/or (ii) legitimize licensing decisions by involving more agencies (or an approval panel composed of key stakeholders and/or academia) in the decision making process. As mentioned previously, a strong environmental agency or ministry (such as SEMARNAT in Mexico, the Ministry of Environment in Brazil or CONAMA in Chile) can contribute to ensuring legitimacy and objectivity in the licensing process.

A key shortcoming is the lack of capacity at the MEM's DGAA to efficiently review, engage in the consultation process, and approve the EIAs. By sharing this process with other areas within the MEM, and/or other capable (and empowered) agencies, technical expertise can be complemented. The difficulty of attracting qualified staff will remain as long as government salaries fail to compete with higher paid wages in the private sector.

Options for enhancing the institutional framework for EIA include strengthening a central environmental agency (i.e. CONAM, or a new agency) to: (i) shoulder the burden of the EIA/licensing process; and (ii) train and involve local and regional agencies in the EIA review and approval process.

Recommendations for improving the quality of EIAs:

If the Guide for Preparation of EIAs continues to be used as a key reference for those in charge of preparing EIAs for mining operations, then it needs to be updated and improved, in order to ensure a more pragmatic, focused and technically sound product. Ultimately the quality of EIAs could be enhanced by:

1) Updating the criteria and standards in the EIA preparation Guide to reflect the latest international standards for EA elaboration (complemented by the Bank's Safeguards);
2) Issuing a ministerial resolution making the criteria referred to in the Guide legally binding;
3) Ensuring that consultations with the community have taken place prior to the preparation of the EIA; and
4) For specific complex project proposals, the MEM should consider preparing specific terms of reference (TOR) identifying key issues and potential impacts, and based on these data, prepare specific TOR for the elaboration of EIAs. The advantage of this approach is that government can tailor the TOR for complex projects to the specifics of the area to be mined and to the nature of the mining operation. The MEM could consider this approach in order to reduce the generalities, gaps and weaknesses in the current Guide

when it comes to addressing specific situations. This would require, however, a qualified technical team to prepare the specific TOR. The MEM largely lacks the capacity to do this work at the present time.

5) Public hearings need to be restructured in order for them to be useful to the EIA process. These changes might include: (i) limiting the number of participants to those living in the affected area; (ii) establishing rules of engagement prior to the public hearing in order to deter behavior not conducive to dialogue; and (iii) allowing an independent professional team to conduct the audience. All this may help those taking part to focus on the issues and, at the same time, enhance the perception of neutrality.

THE ENVIRONMENTAL MANAGEMENT AND ADAPTATION PLANS (PAMA)

Before 1993, when the first environmental regulations were established for the sector, most mining operations lacked environmental management programs that could monitor and regulate emissions from mining operations. As a result, the MEM established Environmental Management and Adaptation Plans (*Programas de Adecuación y Manejo Ambiental* – PAMA), as a way to bring mining operations and smelters up to environmental standards. The objective of the PAMA is to prevent, reduce or eliminate emissions in the atmosphere and water bodies and to comply with the maximum permissible levels established by law within an agreed timetable of actions (and associated investments) submitted by mining companies.

The PAMA had a maximum execution time of 5 years for mining extraction sites, except in the case of smelters where the execution time was 10 years. The execution of this program involved the following phases: (i) developing (through monitoring) preliminary environmental assessments (PEAs); (ii) evaluating the execution and fulfillment of the PAMA; (iii) approving the monthly timetable of actions and investments under each PAMA; and (iv) carrying out mandatory audits twice a year.

The following table shows the timeline of the PAMA:

Table 14. PAMA Timeline

Date	Action
February 1994-February 1995	Monitor Effluents and Emissions
February 1995-March 1995	EVAP
March 1995-June 1995	Evaluation of EVAP
June 1995-August 1996	Elaboration of PAMA
August 1996-December 1996	Evaluation of PAMA
December 1996-December 2001	Execution of Mining PAMA
December 1996-December 2006	Execution of Smelting PAMA

Source: Soldi et al. Op. cit.

The PAMA were based on Preliminary Environmental Evaluations (*EVAT*) of individual operations, and contained a binding catalogue of environmental rehabilitation measures along with their detailed budgets on an annual basis. The DGM is in charge of monitoring compliance with agreed PAMA for each mining operation and smelter, and ensuring adequate fulfillment of environmental standards and regulations, based on the PAMA and independent audits.

In addition, mining entities have been obliged to present an annual progress report (to be audited by the General Directorate of Mines). The majority of companies in operation before 1993 and that continue operating have complied with the implementation schedule established by the PAMA. Companies that do not comply with the PAMA face a series of legal sanctions including

fines and, in severe cases, the shutting down of operations or installations/systems that fail to comply.

The guidelines suggest that PAMA abide by the maximum permissible levels (MPLs) for pollutants and quality standards for the mining sector that were established by law in 1998.[88] The MEM publishes the MPLs of different chemicals/effluents in the mining sector. As table 15 reflects, there is a lack of consistency between the emission standards applied for new projects (through the EIA) and for ongoing mining operations (through the PAMA).

Table 15. Maximum Permissible Levels of Emission for Metallurgical Mining Activities

	For EIA (Mining projects)		For PAMA (Mining Operations)	
Parameter	Punctual	Annual average	Punctual	Annual average
pH	6-9	6-9	5.5-10.5	5.5-10.5
Total Suspended Solids	50	25	100	50
Arsenic (As)	1	0.5	1	0.5
Copper (Cu)	1	0.3	2	1
Iron (Fe)	2	1	5	2
Lead (Pb)	0.4	0.2	1	0.5
Zinc (Zn)	3	1	6	3
Cynide (CN)	1	1	2	1

Source: Golder Associates[89]

Air quality standards usually are assessed by two parameters: (i) stack performance (table 16) alluding to the maximum concentrations of any pollutant emitted from a stack (mass per volume of gas flowrate); and (ii) ambient concentrations (table 17) which refer to the maximum allowable pollutant concentrations in the air beyond the property of an industrial/smelting complex affecting the human health. As table 16 illustrates, the MPL under Peruvian law for the release of lead, arsenic and particular matter (PM) emissions are significantly higher than the reference values provided by the World Bank.[90] In addition, a study carried out in 2003 in La Oroya revealed that for certain activities (i.e. zinc/lead smelting) Peruvian mining standards have not yet been developed (i.e for zinc, mercury, cadmium and other key parameters)[91]. The reference values of the World Bank are based on achievable levels from well designed, adequately operating and maintained smelters with pollution control systems. Thus, consideration should be given to updating the Peruvian limits to reflect currently available technologies and pollution control mechanisms that are applied throughout the world, while also taking into account local conditions.

[88] CONAM procedures state that the MEM will coordinate with other competent sectors to determine these standards. CONAM maintains a national register for all national and international standards applied in Peru.

[89] Golder Associates (2003). Estándares de Calidad Ambiental y Limites Máximos Permisibles

[90] The World Bank. (1999) Pollution Prevention and Abatement Handbook.

[91] SENES Consultants Limited, (2003), Critical Review of the PAMA of the Doe Run Smelter at La Oroya, Peru

Table 16. Summary of Air Quality Stack Performance Standards

Pollutant	World Bank 1998		Peru RM 315-96-EM/VMM
	Primary Lead/ Zinc Smelting	Primary Cooper Smelting	
	Maximum Value of concentrations [mg/m3]		
Sulphur Dioxide	400	1000	
Arsenic (As)	0.1	0.5	25
Cadmium (Cd)	0.05	0.05	
Copper (Cu)	0.5	1	
Lead (Pb)	0.5	0.2	25
Mercury (Hg)	0.05	0.05	
Zinc (Zn)	1		
Particular Matter Material (PM)	20	20	100
Particulates, other sources		50	

Source: SENES Consultants Limited[92]

Table 17. Ambient Standards for Particulate Matter

Source	**Country**	**Pollutant**	**Guideline (ug/m3)**	**Average time**
US EPA	USA	PM10	150	24 hour average
Environment Canada	Canada	PM10	25	24 hour average
US EPA	USA	PM10	50	annual average
Gov. of Peru	**Peru**	PM10	50	annual average
Env. Canada	Canada	TSP	120-400	24 hour average
WHO	For USA	TSP	260	24 hour max
Gov. of Peru	**Peru**	TSP	350	24 hour average
WHO	For EU	TSP	80	annual
WHO	For USA	TSP	75	annual
Env. Canada	Canada	TSP	60	annual (max desirable)
Env. Canada	Canada	TSP	70	annual (max acceptable)
Gov. of Peru	**Peru**	TSP	150	annual

Source: SENES Consultants Limited.

Table 17 illustrates that GoP has adopted similar annual guidelines for PM10 as the US EPA. Nonetheless, the daily and annual limits for total suspended particles (TSP) are higher in Peru than those recommended by WHO and Canada. TSP can lead to respiratory diseases, can cause cancer, and be corrosive and harmful to vegetation.

The following three tables provide information concerning PAMA: (i) monetary amount committed in 2001, showing that at that time, US$ 944 million had been invested; (ii) status of

[92] SENES Consultants Limited, (2003), Critical Review of the PAMA of the Doe Run Smelter at La Oroya, Peru

progress made toward meeting PAMA goals; and (iii) the total amount of funds committed to the PAMA by year[93].

Table 18. Investment in Mining PAMA

Number of Enterprises	50
Production Units	63
End Date	2001 / 2006
Execution Phase	5 / 10 years
Committed Investment	US$944 million
Inv. Executed by Dec. 2000	US$259 million
PAMA completed	8
% advance	26%
Investment pending	US$685 million

Source: Instrumentos Económicos. Sector Minero: CONAM.

Table 19. Investment in Mining PAMA –PAMA Status as of Dec. 2000

Completed		8
Status	**More than 90%**	**13**
	Between 70 and 90 %	**17**
	Between 50 and 70 %	**6**
	Less than 50%	**21**
	Total	**65**

Source: Instrumentos Económicos. Sector Minero: CONAM.

Table 20. PAMA: Investment Committed (US$) through 2006.

Year	Mining
1997	**90 504 975**
1998	**53 008 967**
1999	**69 831 833**
2000	**40 018 732**
2001	**45 392 182**
2002	**89 029 078**
2003	**242 654 000**
2004	**261 299 000**
2005	**53 647 000**
2006	**67 848 000**
Total	**1, 013, 848, 000**

Source: Instrumentos Económicos. Sector Minero: CONAM**.** [94]

As the above tables indicate, through the PAMA there have been investments by mines to reach compliance with established levels. Nonetheless, these investments are lower than initially

[93] These values were made available by MEM at the time this report was produced.
[94] Electronic file. Julia Justo - Coordinadora del Estudio Ing. Fernando Gala - Consultor del Estudio *Referencial de Minería 2000 – 2009- MEM*

expected. It is worth noting, however, that while some foreign companies have reached the emissions levels established by law, they have generally not improved their environmental performance beyond PAMA compliance levels, even though they have had experience of complying with more stringent emissions standards in their countries of origin.

LIMITATIONS TO THE PAMA

Like the EIA process, the PAMA process needs revision and strengthening. The PAMA have suffered from weak institutional and enforcement capacity. There is an institutional methodological weakness in dealing with environmental issues for projects under execution and there may also be institutional deficiency during the execution phase and during follow-up of mitigation measures. There are no economic incentives or market instruments to encourage companies to take voluntary action to meet emission levels and achieve sound environmental performance, beyond the command and control structure.

Conceptually, the PAMA were intended to reach an acceptable level of compliance with existing or adopted permit limits. PAMA were flexible in order to let the companies define their own environmental management strategy and horizon, provided the agreed final outcome was accomplished. Reported results from the PAMA project by the DGAA projected a total investment of US$ 1.013 billion, and an executed US$ 300 million by 72 PAMA.[95] However, as of June of 2004, there were eleven mining projects that failed to comply with their PAMA projects.[96] The results have not only failed to meet the MEM's standards, but also create controversy among stakeholders, who expect projected investments to be executed.

The smelting operation at La Oroya (by Doe Run Peru) is emblematic of the limitations in the application of the PAMAs. In the case of La Oroya, limited investments have been made to meet emissions standards agreed in the PAMA, and thus a request for extension was filed with MEM to postpone compliance with the PAMA to a later date. Many workers, in fear of loosing their jobs, began protesting after Doe Run Peru, claiming financial difficulties, threatened with shutting down operations if its PAMA was not extended. Despite high levels of contamination in the region, the communities supported Doe Run's petition to extend the PAMA. In response to the political pressures, MEM passed a Supreme Decree N° 046-2004-EM, opening the possibility for the PAMA compliance period to be extended for specific cases were technical, economic or financial criteria would make impossible for the mining company to meet the environmental norms (the PAMA) in the initially determined time period. The decree also suggests that the affected community would have to be consulted through public workshops and hearings and DIGESA would have to review a Health Risk Analysis in determining if it is suitable to grant an extension to the PAMA. Based on the information collected and the opinions of the DGM and DIGESA, the MEM could extend the PAMA compliance period.

This process was criticized by NGOs, and even the SNMPE (whose members have made large sacrifices to meet their PAMA), since it leaves a negative precedent whereby decisions concerning environmental well-being are to be based on political pressures rather than on technical basis. As mentioned earlier, it also sends mining companies a poor signal, implying that through local pressure they can avoid meeting their responsibilities in fulfilling the PAMA.

In addition to this recent incident, which illustrates shortcomings in the PAMA framework, the following limitations have also been noted:

[95] SOLDI Et AL. P. Environmental Dimension p. 65.
[96] "Proyectos PAMA Incumplidos al 30-06-2004". MEM website.

- The PAMA do not allow for sanctions to punish the lack of investment in remediation, or investment that was not executed according to schedule;
- There are no financial guarantees involved (to ensure financial compliance);
- The MEM is precluded from modifying the PAMA during execution;
- Criteria on health impacts are not considered in emissions reductions of MPLs and thus are not measured;
- The Preliminary Environmental Evaluation (EVAP) studies were not considered a reliable source for individual PAMA;
- No risk assessments were promoted for individual mining/smelting projects because it was expected that PAMA would cause companies to comply with Maximum Permissible Limits[97];
- Air quality standards are neither obligatory nor enforceable within the scope of the PAMA (also due to a lack of a reliable monitoring system), and there has been a poor pollution prevention approach, which undermines the feasibility of PAMA; [98]
- The MEM does not always follow up on PAMA in a stringent and consistent manner;
- Mineral price cycles (which could affect investment in environmental improvements) have not been taken into account when creating PAMA;
- There is little capacity among some companies to implement PAMA and address their environmental legacies.

There have been criticisms by civil society regarding the Special Program for Environmental Management (PEMA), which was applied in one instance to a mining company which sustained an accident caused by events out of its control. In this instance, the company was granted an extended term to comply with the PAMA under a PEMA. There has been confusion among companies, which understood the PEMA as another phase (or extension) for fulfilling the PAMA. This has been viewed as a perverse incentive for companies, as it provides a way out of complying with the PAMA. However, this study does not consider the PEMA to be of concern as an instrument, as only one PEMA has been issued.

Best Practices

In addition to a command and control system like the PAMA, the MEM should consider instituting Environmental Management Systems (EMS) for the sector, and promote cleaner production techniques. EMS can help firms establish an internal structured process of continuous environmental improvements that are monitored, measured and reported. Some of the environmental management systems include: (i) ISO-14001 certification; (ii) cleaner production mechanisms and technologies; (iii) supply chain relationships; (iv) negotiated agreements and partnerships with the government. These are mechanisms that should be further explored and, if conditions allow, implemented among mining firms in Peru. The caveat is that these systems will only work as long as upper management in the mining/smelting companies is committed to instituting internal changes and investments.

Recommendations

[97] La Oroya Cannot Wait. Analysis of the Environmental Pollution Caused by the Metallurgic Complex and Its Health Impacts. Anna K. Cederstav and Alberto Barabdiarán. Interamerican Association for Environmental Defense AIDA and Sodiedad Peruana de Derecho Ambiental SPDA. Lima, 2002. P. 86.
[98] www.minem.gob.pe: Guía para Elaborar Programa de Adecuación y Manejo Ambiental

Develop PAMA II

Because the term for the PAMA was only 5 years (and 10 years for smelters), companies which have fulfilled with their PAMAs in existence at the time of implementation, as well as newer companies, no longer have active PAMA. It is therefore recommended that the MEM introduce more stringent emission criteria (in line with international standards) and mechanisms to ensure that all mining operations continue thriving towards the achievement of updated emission MPLs (proposed as a second phase of the PAMA). This could ultimately brings the MPL parameters and pollution standards to a more stringent level (in line with either EPA, WHO, or Euro-standards). Taking as a baseline the local parameters and conditions, the WBG Pollution Prevention and Abatement Handbook could serve as a guide for determining the new acceptable levels, and introduce new ones in cases where specific pollution parameters are missing.

Thus, since most companies have developed their PAMA since 1993, the objective of a second phase of PAMA is to set a new framework with more stringent criteria for environmental compliance and performance by mining companies.

PAMA II could be based on the format of PAMA I, but should include stricter standards for Maximum Permissible Levels. Considerations that were not included in PAMA I would be incorporated, including: impacts on health; risk assessments; air quality standards and pollution prevention; and financial considerations. Sanctions on the percentage of investments in remediation that have not been made according to schedule would also be outlined under PAMA II.

In addition, economic incentives should be applied to this scheme, whereby companies which are meeting the PAMA-II and are proactively demonstrating improvements in environmental performance may apply the investments they make to comply with these environmental requirements as credit against their income tax (See Chapter 5 for further details).

PAMA II should also provide for environmental and health monitoring, and in the case of smelters, develop an automated monitoring system, where the emissions would be reported to the MEM (in order to enable it to perform its enforcement functions) and to the population (to inform it of health hazards).

Furthermore, the MEM should reserve the right to modify the PAMA during execution, if necessary. The MEM Guide, which was produced for distribution when the PAMA was introduced, should be updated to include more recent and stringent standards.

However, there are some risks involved with updating the MPL and emissions standards of the PAMA. Companies are likely to react negatively to new demands and may interpret new requirements, especially concerning the health impacts of mining, as additional costs to their operations. Likewise, companies that have failed to comply with the PAMA thus far are unlikely to meet the requirements of a new phase of the PAMA.

Nonetheless, it is also important to highlight the beneficiaries of a system such as PAMA II, which include the communities affected by the mining and smelting operations. The private sector could also benefit from the overall improvement of standards, since it could improve the reputation and overall performance of the sector.

AUDITING SYSTEM

The DGM is responsible for evaluating an EIA and its action plan or PAMA. An external auditor (from a list certified by the MEM[99]) is selected and assigned to a specific operation and, if necessary, makes a recommendation that the mine be fined for noncompliance. The auditor relies on the Environmental Information System (a data base with the monitoring history of each operation). The auditor's recommendation passes to the DGM which applies the environmental fines. The companies can then make an appeal to the Mining Council Board. In the event that the decision of the Council is appealed by the mine, the case will be decided by the Judiciary.[100]

All requests for information and all claims made by both mining companies and interested stakeholders are processed through the MEM. This regulation was produced in response to complaints that companies may not be objective when providing information to stakeholders. A possible flaw in the system is that the auditors are paid by the "supervised" companies, which then report the results to the MEM, creating a potential conflict of interest. Likewise, in many instances where the DGM has issued fines on environmental grounds, mining companies have reacted by making legal claims and suing the public officials (not the Ministry). This has translated into an severe inefficiency for the system, since the officials which are processed by law have to spend large amounts of time defending themselves in court against legal claims, rather than in carrying out their assigned responsibilities.

Limitations of the Audit System

The MEM selects consulting firms based on its list of highly qualified auditors. However, when the firm is contracted to audit a mine, less-qualified auditors are often sent to the mine than those initially presented to the MEM. In addition, auditors are not likely to be assigned to the same mine more than once and therefore will not have the opportunity to build upon their understanding of the operations. Furthermore, it is unfeasible that one person (the auditor) can carry out an efficient audit of a medium or large mine considering the many variants and issues (disciplines, chemical, physical etc.) involved[101]. The MEM has the power to refuse the audit if it is not properly executed, but has not yet determined standards for individual auditors in order to ensure better performance and a lower frequency of rejected audits. Furthermore, contracts are assigned to consulting firms by lot. Therefore, there is little opportunity for an audit firm to familiarize itself with the mine.

Another limitation is that the Environmental Information System is not adequately systemized or up-to-date. Hence, capacity within the MEM to provide information to auditors is weak or nonexistent. A component of the Peru-Canada Project - PERCAN seeks to improve the overall inventory and monitoring systems.

Other relevant limitations to efficient and effective auditing have been identified by CONAM. They include:[102]

[99] External auditors are provided to the MEM through 10 major consulting firms, which were selected by the MEM on the basis of their ability to produce quality audits. While individuals were not barred from the list of auditors, the MEM did not find any individual candidates adequate for auditing.
[100] These are governed by Auditing of Mining Activities Law (No. 27474 – 2001), and the Regulation Governing the Auditing of Mining Activities (Supreme Decrees No. 049-2001 and 018-2003)
[101] An additional problem is that environmental controls measure chemical parameters, neglecting biological indicators and the perceived impacts on the local population. Measures taken of chemical levels of contamination may not be representative, as the company can manipulate these data by not releasing chemicals in the time prior to the audit.
[102] Instrumentos Economicos: Sector Minero: CONAM. Op. cit.

- Paternal company – community relations: some communities prefer to negotiate compensation for environmental impact directly with companies rather than presenting a demand to the authority;
- There is no mandatory auditing and follow up during exploration phases.

Limitations with respect to Enforcement and Fines

The National Mining Council (*Consejo Nacional de Minería*), which reviews the recommendations of the external auditors, is composed of five members (three lawyers and two engineers), who are directly appointed by the Minister of Energy and Mines. These members have a renewable term of 5 years, and while the Council has a high degree of autonomy, its objectivity regarding the enforcement process is often questioned. There has been talk of dismantling the Council, however, the SNMPE turned out to be a strong advocate for the Council, which is known to frequently annul fines issued by the DGM[103]. This may suggest that the Mining Council could be captured and serving the interests of mining companies. Furthermore, the Judiciary very often tends to endorse the decisions of the Mining Council.

As a result only 33% of the fines issued by the DGM in the year 2002 have actually been paid. The remaining 67% were either annulled by the Mining Council or are still bogged down in administrative processes.

The DGM fined mining companies an estimated US$2.3 million in 2002, 90% of which was due to fatal accidents or failure to comply with the PAMA. Of these fines: (i) only a third have been paid; (ii) one third is in the process of collection (a time-consuming process due to legal implications); and (iii) the remaining are in the process of internal administrative revision. In addition, as stated earlier, mining companies that are being fined have retaliated by legally suing (in civil and criminal court) the Director General who is in charge of carrying out mining fine enforcement.

Nineteen percent of total fines correspond to environmental audits, reflecting failures to comply with environmental legislation or commitments made in the EIAs or PAMA. This 19% represents 51% of the cost of inspection computed in man-hours. The cost of audits was originally designed to be financed by fines applied to the mining sector. However, funds from the fines are difficult to collect and are also disbursed to pay for court fees. The mining companies (large and medium-scale) pay for the audits; except in the case of small-scale mining, whose audits are paid by the MEM. In addition, these collected resources (~US$13.8 million in 2002) often go directly to the central budget of MEM, and not to strengthening the enforcement program administered by the DGM. The following Table lists the amounts and numbers of fines paid in 2002.

[103] Personal interview with MEM staff.

Table 21. Mining Enforcement 2002-Fines

Themes	Fined Enterprises	U.I.T.	Quantity Nuevos Soles
Security and Hygiene	3	70	217,000
Environment	4	78	241,800
Special Tests	1	10	31,000
Investigation of Fatal Accidents	70	2,100	6,510,000
Environmental Audits	13	321	995,100
TOTALS	**91**	**2,579**	**7,994,900**

Source: MEM.

Table 22. Evolution of Environmental Fines on Mining Operations since 2000

Number of fines	2000	2001	2002	2003	2004
Environmental Pollution	**3**	**2**	**4**	**5**	**1**
Breaking Environmental Laws and Regulations				**53**	**104**
Lack of compliance with PAMAs			**8**	**12**	**6**
TOTAL	**3**	**2**	**12**	**70**	**111**

Source: MEM.

Best Practices

The state of Colorado in the United States has a Mining Council similar, in terms of the functions it performs, to that of Peru, with some important differences. The Mining Council in Colorado is the only authority with the mandate of setting fines to mining operations, a power that the Mining Council of Peru does not have. There are, however, safeguards for objectivity in the structure found in Colorado. In Colorado, there are 12 members of the council, and their terms are shorter (with no reelection), and they are appointed by a panel (not by the minister).

In the event that a case decided by the Council of Ministers is appealed by the defendant, a Presidential Hearing occurs, whereas under Colorado's law system a judge and open court are required. This judicial transparency and open court system allows interested parties to inform themselves of the actions of the final ruling of the court regarding the environmental fines.

RECOMMENDATIONS

- Following the example of the Mining Council in Colorado, a reform should be proposed whereby the number of members (5) can be increased (perhaps to no more than 7), and new members include environmental engineers, economists (or professionals from other disciplines). The tenure should be shortened and members should not be eligible for re-election. Members should be chosen by a panel including academia and other sectors. The practices of this council should be made public through internet postings of rulings and explanations. Furthermore, the terms of the members should be reduced to 3 years.

- Currently, the National Environment Council (CONAM), although legally entitled to take a role in contested cases, has not assumed any responsibility thus far in the aforementioned process of ruling on mining sector fines. In critical situations, the MEM could benefit if CONAM made use of its discretionary power, assuming a stronger enforcement role;

- A law needs to be enacted to protect public officials who are carrying out their enforcement responsibilities. Thus the MEM (as a public institution), not specific individuals in it, would be the subject of legal claims by mining companies.

- External auditors with the greatest capacity and experience should be allocated to the medium and small companies, where the risk of environmental and social impact is greater. The MEM should develop standards for auditors and consulting companies should be held accountable if they assign an auditor who does not meet the criteria. In addition, for medium and large operations, and depending on the complexity of the mine, the auditor should be obliged to put together a team which can carry out a more efficient auditing process.

- Regarding the Environmental Information System, resources should be allocated to allow for the updating of human resources and of the systems and information provided to auditors.

CHAPTER 4: CAPACITY AND FRAMEWORK TO ADDRESS SOCIAL ISSUES

If there is a defining trait that characterizes the social dimension of mining in Peru that all stakeholders agree on, it is the lack of trust among those involved, including: affected communities (several indigenous peoples), the industry (both domestic and foreign), the government, and civil society at large (*Grupo de Diálogo Minería y Desarrollo Sostenible* 2004). As seen above, environmental damage such as MELs, and the weaknesses of Environmental Governance institutions are two key issues in Peru that cause mistrust among stakeholders. Furthermore, the lack of trust in social relationships, a critical social value for the construction of a healthy social environment, coupled with a generalized negative social perception of mining—that has historical roots—has not only tainted the social framework in which mining companies operate in Peru, but has made dialogue among stakeholders a disproportionate challenge and is a major contributor to the tensions and conflicts currently present in over a dozen mining scenarios.

How did this situation occur? Why do the negative aspects of mining prevail over the positive ones in people's perceptions? The answer lies in a historical set of cumulative effects, to use a metaphor from the environmental dimension. Mining in Peru is a very old activity and is among those (together with the *hacienda* system) that have left tragic marks on the culture of the Andean peasants. In Peru, mining on a larger scale began just after the conquest and once the looting of Inca treasures was exhausted. The search for gold and silver was the obsession of the Spanish conquistadors and the colonial administration had, as its main economic activity, the extraction of these metals. For this purpose, the *mita* or compulsory work in the mines was established for the Andean people, resulting in one of the most exploitative and inhumane treatments of the indigenous peoples in colonial times.

Even though this is the colonial past, the effect of mining on the culture of the Andean people is still alive in their folklore, music, dance and poetry. These cultural aspects are perhaps the most prominent gaps in most current studies about the social dimensions of mining in Peru. While in the 1970s-80s, publications by historians and social scientists addressed these issues, in the literature of the 1990s and the most recent publications dealing with the most urgent social issues in contemporary mining, very little, if any, attention is given to its cultural impacts. It is important to note that social perception is not a snapshot instantly created in peoples' minds, but a complex process with historical roots that helps define people's understanding of and explanations about their social world. Although this study will not deal with these cultural matters explicitly and will instead focus on a few key social issues in which there is consensus among both stakeholders and experts, it is worth recalling that there is a historical depth to the current social perceptions of mining.

Contemporary mining inherited -- and to an extent also contributed to -- this negative perception. However, it is important to note that mining in Peru is carried on in poor and sometimes extremely poor rural areas, characterized by economic stagnation, lack of employment opportunities and weak, underdeveloped social capital. Thus, the local communities have interacted with the mines as a means to earn cash income, despite their negative perception. The income of a mining operator is on average 10 times higher than the income of an Andean peasant (Farfan 2004).

In the current local mining context, where social expectations are usually high regarding large-scale investments and negotiating capacities are rather low, the lack of a more proactive role on the part of the Ministry of Energy and Mines has further increased the communities' perception of not being recognized as social actors. Contemporary mining in Peru has a controversial and ambivalent image among local stakeholders: it has inherited the environmental liabilities from the

past and although it is seen as a job provider on a limited scale, it has not overcome the social disenchantment to be found in most local communities.

The mistrust that characterizes the relationships among stakeholders is also due to a lack of knowledge about each other. The mining industry has done little to understand the surroundings and social and cultural aspects in a more comprehensive way. The government has also done almost nothing to provide the industry with the required information about the local communities and their way of life. Finally, several communities and a number of social and environmental NGOs have adopted a confrontational attitude towards the industry and the central government. There have been limited opportunities for a dialogue to help create the conditions needed to improve the environmental standards of the industry, ensure sustainable benefits for the affected communities, and foster a more active and more balanced role for the government to lead a process of negotiation in the sector. Only recently, a Dialogue Group was formed that includes representatives from the industry, NGOs and some government departments, but the communities represented by CONACAMI (National Coordinator of the Communities Affected by Mining) are still reluctant to participate.

The following section describes some of the key social issues that compound current tensions and help to explain why mistrust and negative perceptions prevail. This analysis should also provide the basis for recommendations on how to overcome social bottlenecks in the short and long run.

SOCIAL CONFLICTS AND KEY SOCIAL ISSUES

In a discussion of the social aspects of mining in Peru, the first distinction that needs to be made is between informal small-scale mining (including artisinal mining) and formal mining (both large and medium-size operations). Some of the key social issues are common across the various types of mining, while others are exclusive to a particular type.

Some of the most common social issues in the various formal mining scenarios are[104]:

a) Unfulfilled expectations for employment and benefits;
b) Land acquisition and resettlement impacts;
c) Lack of adequate communication among companies, communities and the government in the licensing process;
d) An increase in prostitution and violence;
e) Weak enforcement of regulations or even absence of the government;
f) Lack of local capacity for negotiating and management; and
g) The perception of mining as a polluting activity that particularly affects water resources, produces emissions that contaminate the air, and adversely affects public health.

The main social issues specifically associated with artisinal and small-scale gold[105] mining are: environmental impacts on public health due to mercury pollution of air and water; child labor; conflicts over land contracts; and the lack of basic public services for miners and their families (Kuramoto, 2001).

[104] These social issues have been identified through a literature review, particularly the study requested by the AAA team (Recharte et al, 2003), and a consultation process with experts from the WBG, MEM and SNMP.
[105] This type of mining is almost exclusively devoted to gold extraction.

For large and medium-sized mining, it is possible to identify three scenarios: (i) areas with old mining activities, (ii) regions with recent mining developments; and (iii) new areas without previous mining (Recharte et al 2003). The distinction is important since each area has a unique set of features that frame the social relationships, tensions, conflicts and achievements.

Areas with old mining activities are located in the central highlands and in the south of Peru. Generally, these are areas where old state-owned mining companies have been privatized and/or modernized (the Departments of Pasco and Junin) or where private transnational companies have been operating for a long period (the Department of Moquegua and the city of Ilo). In these two areas, conflicts involve environmental issues that may have impacts on public health. In Pasco and Junin, where the state-owned company Centromin was privatized without complying with its own legal commitment of removing the mineral tailings, there are now cumulative environmental impacts and the private companies have inherited these legacies. In Moquegua, a long history of tensions and conflicts has emerged from water usage complaints in the valleys surrounding a Southern Peru Copper Corporation mine and claims of air pollution caused by the same company in the city of Ilo.

Regions like Ancash and Cajamarca only had minor mining developments before the recent establishment of very large projects. In the case of Ancash, the Antamina mine is one of the largest mines currently in operation in Peru, and although the early mismanagement of community relationships created conflicts regarding land acquisition, at present this development might represent one of the few best practices in the sector in Peru. In the case of Cajamarca, the Yanacocha mine is the largest gold mine in Latin America currently in operation and it is about to incorporate new areas for exploration. The mine has encountered tensions and conflicts with local farmers because of land acquisition issues and with the city of Cajamarca due to misperceptions regarding water pollution. As this study was being written, new clashes occurred between peasants and the police due to the beginning of mine exploration in the Cerro Quilish, to which the peasants are opposed for fears that it will affect water sources. The mine has so far stopped exploration.

There have been recent attempts to open new areas for mining development in the northern area of the country that have failed due to severe conflict, one example being Tambo Grande (a prosperous farming valley) and Huancabamba, in the highlands of the Departament of Piura. Both conflicts have resulted in a public request by the Catholic bishops that no mining development permits be granted in the provinces of Piura, Chulucanas and Jaen (*Ideele* # 357, May 2004). In the first example, the people of Tambo Grande rejected the project due to fear that the water they use for agriculture would be taken by the mine and because part of the town would have to be displaced to access the mineral deposit. In Huancabamba, the *rondas campesinas* (self- defense peasant organizations) are opposed to the project because part of the concession is located in the buffer zone of a protected area. However, according to the mining company, this area is used for the cultivation of poppies (opium).

Thus the panorama in the mining sector runs from best practice cases such as Antamina (in operation), on the one hand, to highly conflictive scenarios such as Tambo Grande (pre-development), on the other. In between, there are a variety of situations illustrating that a significant portion of the sector is affected by social tensions and some hefty conflicts (see Table 23.).

Table 23. Current Mining Conflicts in Peru[106]

REGION	MINE	CONFLICT	ACTORS	STATUS
1. Cajamarca	Yanacocha	Impacts on peoples' health due to mercury spill	Choropampa inhabitants, Vicariate, Defensoría (ombudsman), CNDH, MEM, DIGESA, INRENA	A number of the affected people have filed suit in a U.S. court against the Yanacocha mining company
2. Cajamarca	Yanacocha	Expansion of mining to Cerro Quilish	Municipality of Cajamarca declares the hill a protected area in order to prevent expansion due to concerns about water pollution	The Constitutional Court resolved against this municipal decree stating that the municipality is not invested with the power to declare protected areas and recommends that an EIA be made. There were clashes between peasants and Yanacocha mine due to the start of exploration. After the confrontation, the mine declared that it would suspend the exploration and conduct more hydrological and hydro-geological studies as requested by Cajamarcan civil society
3. Ancash Highlands	Antamina	Land acquisition and resettlement of farmers in San Marcos and Chipta-Pincullo. Concerns about ore processing	Highland peasants and mine company	Creation of *Comités Ambientales*/Environmental Committees (weak performance)
4. Ancash City of Huaraz	Antamina Pierina	Strikes, demonstrations, vandalism and road blocks in the City of Huaraz and the Ancash region to demand broader environmental protection and social investments by the Antamina and Barrick mining companies in the Ancash region.	The mayor of Huaraz, the March 7th Civic Committee, labor unions, Defensoría del Pueblo, Bishop of Huaraz, university students, Ancash inhabitants, and Barrick and Antamina mining companies.	Series of Round Table Discussions (Mesa de Diálogo) with the mayor of Huaraz, the March 7th Civic Committee, Defensoría del Pueblo representatives, and Barrick and Antamina mining companies' representatives, mediated by the Bishop of Huaraz in order to resolve the conflict.

[106] This table was prepared with information from Recharte et al (2003), the CONACAMI website (www.conacami.org), inputs from MEM staff, and the national press.

REGION	MINE	CONFLICT	ACTORS	STATUS
5. Ancash Coast Huarmey	Antamina	Complaints about the consultation process for the EIA created conflicts	Frente de Defensa y Desarrollo de Huarmey (CONACAMI), CONAM	Creation of a Multi-sectoral Technical Commission for monitoring and supervision
6. Ancash	Pierina	Landslides produced by mine activities affect community	Members of Atupa Community and Barrick Misquichilca company	It has been clarified that the impacts on houses were not caused by mining activities
7. Pasco	Volcan Milpo Atacocha Brocal Aurex	Noncompliance with PAMA (environmental legacies). Pollution of San Juan and Huallaga rivers and lakes Chinchaycocha and Yanamate.	Impacts on ten peasant communities (environmental legacies), several mining companies	Natural Reserve declared under emergency by Congress. Dialogue underway between communities and President of the Council of Ministers
8. Junin	La Oroya	Lead levels in children's blood above health standards due to decades of fumes and cumulative effects from smelter.	MEM, CENTROMIN, Doe Run, municipality, NGOs, grassroots organizations	In order to fulfill with the extension of the PAMA until 2011, Doe Run has contracted a health study.
9. Junin	La Oroya	Demonstrations near La Oroya, concerning Doe Run's inability to comply with its PAMA and fear of mine closure-job losses if the MEM forced Doe Run to close down due to non-compliance.	Doe Run company, La Oroya workers, MEM, DIGESA, and the surrounding communities.	The MEM issued Supreme Decree N° 056-2004-EM, which allowed the Doe Run PAMA compliance period to be extended until 2011. The surrounding community and local mayor supported this decision. Many in the private sector (SNMPE) and NGOs disapprove of decision.
10. Huancavelica	Buenaventura Lircay	Communities call for clean-up of Ucanan and Opamayo rivers polluted by acid waters	Local communities Buenaventura	
11. Apurimac	Southern Peru Copper Corp.	Local community demands compensation of US$0.5 million for damage to pastures, water canals and archaeological sites	Quichque town Southern Peru	

REGION	MINE	CONFLICT	ACTORS	STATUS
12. Cusco	Tintaya	Conflict originated 20 years ago for land acquisition and impacts on pastures. In spite of a standing agreement with adjacent communities (and a participatory monitoring with communities), settlers from Espinar took over the Tintaya mine forcing its closure.	Local communities of Espinar, Oxfam, Church BHP Billinton, MEM	The recent conflict continues to be unresolved and currently there is an ongoing dialogue and negotiations between MEM, representatives of Espinar, and BHP Billinton, facilitated by OXFAM and the Church.
13. La Libertad	Mina Horizonte - Retamas	Complaint submitted to Inter-American Court for Human Rights (IACHR) since, for several years the Horizonte Mining Consortium has been carrying out underground works creating infrastructure damage to the town above.	Retamas , District of Parcoy, IACHR, Horizonte Mining Consortium	
14. Lima	San Mateo de Huanchor	Complaints about arsenic tailings deposit (Mayoc). Impacts on health.	Local town and MEM Banco Wiese-Sudameris	A technical commission has been formed to solve the tailings issue, and the complaint has been submitted to the Inter-American Court for Human Rights (IACHR).
15. Moquegua	Quellaveco	Concerns about use of underground waters of Chilota River. CONACAMI questions EIA	Local peasants, CONACAMI, MEM	Round Table discussions (*mesa de diálogo*) led to establishment of a technical committee comprising representatives of the MEM and Min. of Agriculture. They hired a consultant to carry out a hydrological study, which put forward 8 alternatives. A pre-feasibility study has been agreed upon.

REGION	MINE	CONFLICT	ACTORS	STATUS
16. Piura	Tambogrande	Strong opposition to the project. Part of the town (25%) would have to be resettled and concerns about water use for farmers.	Local town, MEM, NGOs Manhattan Company	The GOP terminated the contract with Manhattan Minerals, and the company has called-off the arbitration.
17. Moquegua Ilo	Southern Peru Copper Corp. (SPCC)	Complaints about air pollution from the smelter	Municipality, NGOs, Frente de Defensa and Coordinadora por el Desarrollo	SPCC has begun building a new smelter that will capture more than 90% of SO_2 emissions.

It is worth noting that out of the 17 conflicts identified in Table 23, five involve the use of water and the pollution of rivers and lakes and associated environmental legacies, four involve land acquisition, resettlement and resettlement-related issues, and five involve air pollution and public health. As evidenced by this table, the majority of the social conflicts in the mining sector in Peru stem from environmental concern regarding direct impacts on natural resource use and peoples' health.

UNFULFILLED EXPECTATIONS FOR EMPLOYMENT AND BENEFITS

Most of the formal mining in Peru takes place in remote and economically depressed areas (Tambo Grande could have been one of the few exceptions), where government presence is sporadic due to the --in practice-- still largely centralized nature of the Peruvian state. The employment rates are very low in these isolated areas, education is of very poor quality, and the inhabitants are usually Andean (Quechua or Aymara-speaking) peasants and pastoralists. These factors explain the high and somewhat disproportionate expectations that local people have regarding large and medium-sized mining investments. The communities see these developments not only as providers of jobs, but also as a means to obtain access to basic public services.

The mining industry has fulfilled some of these expectations through their community programs, but one cannot expect that mining by itself can solve the issue of local unemployment, since, following the development phase, mining generally requires only a small number of specialized employees. Most potential local workers lack specific training and education to prepare them to become qualified mining workers.

Mining companies are considered to have a higher rate of social investment than other sectors: more than half the mining companies in Peru engage in these kinds of investments. The majority have supported rehabilitation of roads (93.3 percent), support to local activities (70 percent), support to local sports (66.7 percent), provision of electricity (63.3 percent), donation of books (60 percent), among others (Caravedo, 1998). Yet, in general these benefits tend to be isolated economic compensations based on informal agreements and do not contribute to development frameworks in which communities are empowered through a process of capacity building and understanding of their own priorities. This fairly typical approach on the part of the mining companies does not help develop a more integral relationship among the stakeholders. It has also been argued that there is no real connection between the minerals extracted and the wealth generated in a specific area, which, over the years, has strengthened the debatable argument that

mining does not generate wealth or improve the quality of living of the affected communities (Farfan, 2004).

It is clear that mining companies alone cannot and should not be expected to solve the complex issue of the sustainability of the services and goods that they provide to local communities as a matter of compensation. Government intervention and commitment is crucial to any attempt at sustainability, but because resources are always limited, these more remote regions have historically received very little support. However, this trend has started to change, in part due to the *derecho de vigencia* (concession fee) and the *canon minero* (50 percent of income tax), which is allocated to district, provincial and regional municipalities in the area where the resource is extracted and other legal requirements (including the newly proposed royalties, described in Chapter 5) that channel some investment to municipalities at district and provincial levels. Nonetheless, apart from the issue of financial resources, more needs to be done to bring about a more balanced share of benefits among local stakeholders, lower expectations in communities, and address the issue of social sustainability.

In addition to the limited creation of local jobs and the provision of some benefits, mining has the potential to serve as a catalyst for the creation of local services associated with the mine. In some countries such as Canada and Australia, local communities have become service providers to the mining sector. This is where the potential for future sustainability resides and where donor and government efforts should focus in terms of channeling the benefits of mining to support capacity building and capital investment at the local and regional levels in order to create business partnerships between the mine and the local people.

However, there are some undesirable side effects of mining on local economies that have had limited exposure to a cash economy and that should receive more attention. The inflow of money tends to generate local price inflation, increase alcoholism and prostitution, and produce high rates of criminality and immigration (Farfan 2004). Some of these problems can be prevented through adequate local employment policies, campaigns to educate the workers' families on the use of cash for improving their livelihoods, and the creation of housing saving programs.

LAND ACQUISITION AND RESETTLEMENT IMPACTS

Land acquisition seems to be one of the more clearly defined social issues that often end up creating tensions, misunderstandings and social conflict in Peru. A structural reason for these problems is the fact that, almost invariably, land is purchased from peasants, even at a reasonable compensation price, but they do not know how to establish a new livelihood without having access to new land. For a peasant farmer, losing access to land is more than just losing a piece of land, it is equivalent to losing a whole world of social relationships based on kinship ties and social reciprocity—it is equivalent to facing the unknown. Peasants without land become landless rural workers, who are usually ranked among the poorest of the poor. It is well known that arable land is a scarce resource in the Peruvian Andes, particularly at higher altitudes, which is where the majority of mines are located. All too often, the land acquisition process results in landless peasants and poorer families. As pointed out by Farfan (2004), there are several other unresolved issues, which further complicate land acquisition in the rural Andes:

- Unresolved conflicts with boundaries[107] (i.e. pieces of land with two owners);

[107] Government launched a national initiative a few years ago through a special program called PETT (*Programa Especial de Titulación de Tierras*) to clear issues of possession and titling, but it is still far from achieving desired results.

- Lack of legal possession (i.e. lack of titles and registry vs. ancestral rights);
- Difficulty in assessing market price;
- Lack of standardized methodologies to assess principles of reciprocity and land sharing among different communities (i.e. it is very common, when purchasing land, to identify plots that are being shared by multiple families or being rented); and
- Communal land versus individual land (another issue that has to be carefully managed when acquiring land)[108].

These issues are usually too complex to be solved in the time frame allocated for land acquisition in mining investments. Ideally, they should be identified during the preparation of the Environmental Impact Assessment as part of the social impact assessment and start being resolved before or at least at the signing of a mining contract with the government, in order for the company to have a clear local scenario regarding who owns what and to be able to enter into land contracts without generating a cycle of conflicts.

The Peruvian legal framework also complicates land acquisition, since land possession is defined in such a way that individuals or communities are granted surface rights, while the underground remains in possession of the government. This dual ownership of a resource has prompted conflicts among stakeholders because it allows central government authorities to grant mining concessions in places where other economic activities are being developed (such as farming) that constitute an important source of income for a specific community.

As a critical part of this legal framework, Law 26570 on *Servidumbre Minera* [Mining Easement/Covenant] (1996) added a controversial dimension to the issue of land use for the mining sector. This law is considered by several stakeholders as a mechanism to exert pressure over those communities that would not agree to have a contract for the purchase and/or use of their lands. It has generated fear among communities because it creates the perception that if negotiations fail between the investor and the community, the latter will be left without possessions (Farfan 2004). The majority of stakeholders believe that this law does not contribute to the creation of good relationships and, on the contrary, exacerbates conflicts. It is seen as an expropriation mechanism that further contributes to the asymmetry between mining companies and farmers or communities (Bernales, 2004). However, it is interesting to note that this law has only been executed by the government once, at the request of a private investor in 2003.[109] This first legal precedent has been perceived by CONACAMI and its affiliated communities as a major threat and has heightened concern about this issue.

Parallel to land acquisition, the resettlement of families or even towns has not been frequent in the sector, but when there has been resettlement, it has contributed to conflicts due to lack of experience and a poor grasp of the process. There are no regulations or even guidelines for resettlement within the mining sector, although outside the sector, the Ministry of Transport and Communication does issue guidelines and is the most experienced state institution in implementing resettlement. It is therefore a potential source for learning lessons.

The appropriate management of land acquisition and the adequate implementation of resettlement plans are key aspects for beginning the development phase in mining. Nonetheless, these aspects,

[108] According to Law 24656 on Peasant Communities (1987), decisions regarding community land require at least two thirds of community members' votes to rent or sale community land regardless of whether community members live in the community. The emigration of community members creates difficulties for complying with this requisite and the presence of outsiders and their participation also creates conflicts.

[109] This is the case of Cementos Lima and the community of Collanac in the province of Lima.

(as shown in the literature and in Table 23.) tend to linger unresolved, even after the development phase has been finalized.

LACK OF ADEQUATE COMMUNICATION IN THE LICENSING PROCESS

The mining sector in Peru suffers from a serious lack of communication and there have been very few attempts to remedy this deficiency. Communication should be understood as a dimension that is embedded in the relationships and interaction among stakeholders and can only be improved through the licensing and consultation process. This process encompasses several aspects, including the quality of the licensing and consultation process, performance indicators, and the demonstration of results with respect to the commitments made to local communities.

As mentioned in Chapter 3, consultation with people affected by mining is carried out pursuant to the country's legal framework regarding environmental impact assessments, *audiencias públicas* and the Law on Citizen Participation. However, the quality of the consultation process and the timeline for its implementation has raised concerns among stakeholders. Unfortunately, the consultation process is usually conceived and implemented to fulfill legal requirements only and it is not perceived as a business tool that could help to legitimize mining projects with the local populations and contribute to getting a "social license" to operate. This general attitude towards the licensing process by the mining industry is linked to the overall lack of adequate corporate social responsibility in a context in which government has little enforcement power. Indeed, Caravedo (1998) suggests that beyond the mining sector, the organizational culture of the country is based on negative values such as authoritarianism, lack of solidarity, corruption and pessimism, a view that is shared by the common citizen. In this regard, Recharte et al (2003) add that most companies at best have a public relations understanding of their relationship with the affected communities, which does not contribute to improving the licensing process and, on the contrary, diminishes the possibilities of building trust.

Instead, the consultation process should be seen as another important investment in the process of establishing the mine and should last as long as needed throughout the various phases of mining development and whenever there is a new issue or a significant change in project implementation. Furthermore, the information to be communicated needs to be adequately tailored to the culturally-diverse audiences; this rarely happens. The Peruvian legal framework does not require a separate social impact assessment (SIA) for clearance at the *Audiencia Pública*. Given the importance of social factors in the mining sector in Peru, it may be worthwhile to explore whether the law should require an SIA as a tool separate from the EIA in order to ensure that the social dimension receives adequate treatment throughout the licensing process and that social baseline studies are carried out to support the development of social performance indicators.

Currently, the legal framework in Peru does not require audited environmental and social performance indicators from the mining companies. The issuance of audited annual reports with performance indicators have been a best practice in the case of a few companies in the oil and gas sector in Peru and it should be implemented for the mining sector. The advantage of these reports is that they show the actual way companies are managing the environmental and social implications of their projects and they bring much needed transparency to the process, which in turns increases trust among stakeholders. In addition, adherence to the Global Reporting Initiative (GRI) could be serve as a mechanism to ensure that social and environmental performance indicators are shared and disseminated.[110]

[110] The Global Reporting Initiative (GRI) is a multi-stakeholder process and independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines.

Another facet of communication among the main stakeholders is information regarding the results of the agreements reached between the mines and the local communities on compensation for affecting the environment and community access to natural resources. Very few companies keep records on progress made in implementing compensation agreements and even fewer companies disclose this information to the public. In addition to the performance indicators mentioned above, these results should be included in annual public reports audited by a recognized auditing firm.

WEAK ENFORCEMENT OF REGULATIONS AND ABSENCE OF THE STATE

A major complaint among stakeholders is the low capacity of the central government to enforce regulations at the local level and, in some circumstances, its total absence in the local scenarios. The decentralization process that started with the current administration may help to address this issue. Once decentralization is accomplished, the regional governments are expected to carry out the overall monitoring functions that are now in the hands of the central government. In the short run, however, the decentralization law allows regional governments to oversee small-scale and artisinal mining.

The PERCAN Project currently being implemented in the MEM will support capacity building for the MEM regional offices and may help to strengthen the presence of the Ministry in local scenarios. However, there are several steps that the MEM can and should take to improve the licensing process, ensure better regulation enforcement, and enhance its role in the sector at the local level. One of these steps is to reinforce its role as a provider of information and to prepare guidelines for the industry on how to address the most critical social issues, especially with regard to social assessment as part of the EIA process, the quality of consultation, land acquisition agreements, resettlement processes, compensation accords, and local employment policies.

LACK OF LOCAL CAPACITY FOR NEGOTIATING AND MANAGEMENT

Another increasingly critical social issue -- given the implementation of the *canon minero* and the recent law on the creation and distribution of royalties -- is the lack of local capacity for negotiation and management. Local affected communities and even district and provincial municipalities do not have negotiating skills or sufficient experience with negotiation processes. Instead, the position traditionally taken by these social actors has been to adopt a confrontational attitude, which usually leaves little or no room for negotiations. This attitude is currently being counterbalanced with the creation of the *Mesas de Concertación* (consensus-building fora) that are functioning in a few cases in the sector and the creation of *Comités Ambientales* (Environmental Committees), which promote third-party monitoring of the industry. These two new local institutions should be reviewed and any lessons learned should be applied to improve their performance.

There is a serious lack of local management capacity for investment projects and local development and little accountability or transparency in the management of funds at the local and provincial levels. Overall, social capital is weak and underdeveloped. Local communities and municipalities require strong enhancement of their management capacity to ensure that funds from the *canon minero* and future royalties[111] are used to support local priorities for development in a sustainable way (see Chapter 5). Currently, several dramatic situations at the local level (outside the mining sector) reveal that confrontations due to lack of transparency, suspicion of

municipality corruption, and the lack of trust in local authorities have escalated, resulting, in one case, in the slaying of the local mayor in the case of Ilave (Puno) and in the ousting of several other mayors in rural municipalities across the country.

THE NEGATIVE SOCIAL PERCEPTION OF MINING AS A POLLUTING ACTIVITY

Mining is generally perceived by civil society, including local affected communities, as a polluting activity (Recharte et al 2003). The basis for this generalized social perception[112] stems from the environmental legacies left by decades of mining activity in the Peruvian highlands at a time when environmental considerations were not taken into account. Another contributing factor to this perception is the lack of a communication strategy both in the MEM and in the industry that could and should help to change this negative reputation, at least for the new and most recent projects, which are trying to develop according to the country's legal environmental framework.

This generalized perception is also activated when new mining projects are implemented, thus creating tense situations from the outset. However, new projects also represent opportunities to improve the standards of the industry and implement changes in the relationships with the local communities. In this sense, and as suggested by Recharte et al (2003), the MEM should consider developing pilot cases to introduce changes in the licensing process with new large projects that are expected to begin investment in the short run. These pilots would provide a space to implement both environmentally and socially best practices. In order to create such a space, the MEM should work in partnership with the mining operators and with the participation of interested NGOs. The pilots should apply the best practices found in the mining and hydrocarbon sectors for implementing consultation, managing impacts, acquiring land, establishing agreements, reaching consensus on the types of benefits and creating local capacity to generate business partnerships and local services for the mine. Successful pilots, which implement participatory monitoring and are properly audited, would be the most effective way to achieve a demonstration effect and lead to a more balanced view of the mining sector. It is also an appropriate way to help create a more favorable social environment for attracting new investments in the mining sector. We develop this proposal in more detail in the recommendations section.

THE WORLD BANK'S SOCIAL SAFEGUARD POLICIES APPLICABLE TO THE MINING SECTOR

There are two World Bank social safeguard policies that are useful tools to help manage the challenges posed by several of the key social issues[113]. The Operational Policy (OP) 4.12 on Involuntary Resettlement (revised April 2004) and Operational Directive (OD) 4.20 on Indigenous Peoples (September 1991)[114] provide a framework for recommendations and outlines of processes that address some of the most important bottlenecks in the licensing process, the management of relationships with the affected people and the best approach to generate benefits, even under stressful situations such as resettlement and land acquisition.

[112] Regardless of whether it is right or wrong, social perception is a critical social factor that can seriously affect relationships among social actors, as the mining sector illustrates.
[113] The safeguard policies of the World Bank must be applied in Bank-financed projects. However, the private sector has viewed these policies as a framework for implementing best practices in projects without Bank financing as well.
[114] This OD is presently being revised into Operational Policy (OP) 4.10.

OP 4.12 Involuntary Resettlement

The most important message of this policy is to take all possible measures to avoid resettlement. The reasons are overwhelming—physical displacement causes people to lose much that is dear to them and, if carried out properly, it is a costly process that requires experienced institutions; so it is worth doing everything possible to avoid it. Possible alternatives to resettlement may include changing the project design or searching for alternative sites. Resettlement usually entails the loss of: land, home, income, access to public utilities (water, power, telephone, sewers), access to services (health, education, transportation, leisure), access to trade and credit, and social networks (family, community) and it may have health effects such as increased mortality and morbidity. If, however, resettlement is unavoidable, the policy recommends: (a) minimizing resettlement; (b) minimizing and mitigating adverse impacts on affected populations; and (c) restoring or improving the income and living conditions of the displaced population.

When it is not feasible to avoid resettlement, these activities must be conceived and executed as sustainable development programs that compensate affected people at full replacement cost for losses of assets attributable directly to the project and help to restore peoples' capacity to earn a living and their community ties. When implementing a resettlement plan[115], the Bank requires that people are informed of their rights and options; consulted on offered choices and provided with feasible resettlement alternatives; provided prompt and effective compensation at full replacement cost for losses of assets; provided assistance during relocation; provided with housing or agricultural sites at least equivalent to the advantages of the old site; offered support after displacement for a transition period to restore livelihood and standards of living; and provided with development assistance, such as land preparation, credit facilities, training, or job opportunities.

As noted above, the issue of land is a critical one when dealing with resettlement in mining scenarios. In this regard, and particularly when dealing with the resettlement of indigenous peoples with traditional land-based modes of production, the policy states that preference should be given to land-based or land-for-land resettlement strategies. These strategies may include resettlement on public land or on private land acquired or purchased for resettlement. Whenever replacement land is offered, resettled people are provided with land for which a combination of productive potential, location advantages, and other factors is at least equivalent to the advantages of the land taken. If land is not the preferred option of the displaced persons, the provision of land would adversely affect the sustainability of a park or protected area, or sufficient land is not available at a reasonable price, non-land-based options built around opportunities for employment or self-employment should be provided in addition to cash compensation for land and other assets lost.

Cash compensation may be appropriate when: (a) livelihoods are land-based but the land taken for the project is a small fraction of the affected asset and the residual is economically viable; (b) active markets for land, housing, and labor exist, displaced persons use such markets, and there is sufficient supply of land and housing; or (c) livelihoods are not land-based. Cash compensation levels should be sufficient to replace the lost land and other assets at full replacement cost in local markets. At a minimum, the resettlement process must create an opportunity for the affected population to resume their normal lives and restore their quality of life. Ideally, the affected population will be better off than before.

[115] For full detail on the required measures, consult OP 4.12 Involuntary Resettlement.

OD 4.20 Indigenous Peoples

This is the only World Bank policy that is addressed to social groups (not to individuals), which makes it very relevant for the mining sector in highland Peru, characterized by a majority indigenous population. The objectives of the policy are to ensure that: (a) adverse impacts are avoided, minimized or mitigated; (b) indigenous peoples are consulted and participate in projects in an informed manner; (c) benefits targeted to indigenous peoples are culturally appropriate; and (d) development projects respect indigenous peoples' dignity, human rights and identity. The policy provides a set of five criteria, which could be present in various degrees, to identify indigenous peoples:

- close attachment to ancestral territories and to the natural resources in these areas,
- self-identification and identification by others as members of a distinct cultural group,
- an indigenous language, often different from the national language,
- presence of customary social and political institutions; and
- primarily subsistence-oriented production.

For an investment project that affects indigenous peoples,[116] the policy requires the preparation of an Indigenous Peoples Development Plan (IPDP) and provides an outline of the content of such a plan. The guiding principle of the policy is the process of informed participation of indigenous peoples throughout the implementation of the project: from consultation to decision making and development, and from social assessment to monitoring and evaluation. Regarding the sensitive issue of land, the policy indicates that the Bank can provide assistance to governments to convert traditional land rights of indigenous peoples into legal ownership, and that long-term, renewable rights of custodianship and use are granted to indigenous peoples. The policy requires that implementation and monitoring of the IPDP throughout the project is carried out by experienced social experts.

[116] In the event that the bulk of the direct project beneficiaries are indigenous people, the Bank's concerns would be addressed by the project itself and the provisions of this OD would apply to the project in its entirety.

The Camisea Project

The best practice case in Peru is probably the Camisea Natural Gas Project when Shell was the operator between 1996 and early 2000. During that time, Shell established a team of environmental and social experts under its Health Safety and Environment department that developed into an internationally awarded[117] program for the high quality of the consultation process and the support provided to the social capital of the indigenous communities in the Lower Urubamba river area of the Peruvian Amazon basin. It is considered a best practice case worldwide and although there are significant differences in geographical and social contexts with the mining areas in Peru, its principles remain valid and applicable to the sector.

The local consultation program[118] reached 45 indigenous communities and a town of mixed population and entailed seven rounds of consultations. The consultation was conceived as an ongoing process of two-way flow of information. Its goals were to provide information on the project (the entire life cycle); learn about concerns regarding environmental and social issues; support participation in the project decision making process and design; identify expectations; explain the company's commitment to net benefits; address expectations through an agreed compensation process to improve social capital; contribute to building capacity for regional leadership; and ensure maintenance of the company's license to operate[119].

During the consultation process, project issues and social capital issues were presented separately. Graphics, photos and even 3D models were extensively used. Communities received copies of the materials presented and their own feedback. Specific experts (design engineers) were included to deal with key issues. Community involvement in enforcement of the agreed plans was discussed thoroughly. The topics for consultation included: the environmental impacts of cargo logistics (river traffic) and mitigation measures, air transport, construction activities, location of the pipelines, etc. Agreements were reached for the participation of communities in the implementation of several mitigation measures. Social impacts were also intensively discussed as well as the policies to be implemented to mitigate the adverse effects and enhance the positive ones.

A Community Relations Guidelines and a River Traffic Safety Booklet were developed and consulted with communities in detail before becoming mandatory policies for all employees and contractors. A health pass was instituted to keep a record of all the vaccinations that the Camisea personnel had to have in order to protect themselves and to avoid bringing diseases to the region. A plan to avoid contact with isolated populations and a response plan and a contingency plan in case of contact were also prepared. A national workshop was organized to discuss the sensitive issue of the isolated peoples. The Camisea personnel received training on the basic and the most critical environmental and social issues and the staff was confined to the camps and wells in an "off-shore policy" to avoid intrusion in the daily life of the nearby communities.

Beyond the issue of impacts, the consultation process was also useful to discuss a regional agreement for the distribution of benefits, to agree on the company's policy for local

[117] At the annual conference of the International Association for Impact Assessment (IAIA) in Hong Kong in 2000, the Camisea Project was given the corporate award for best practice.
[118] There were also consultations at regional, national and international levels.
[119] The EIA also had its own consultation process, which was carried out by the consulting firm that had developed it.

employment, and to agree on the kind of compensation for unavoidable impacts and on a strategy for regional sustainable development.

Several baseline studies were carried out including a health baseline regional study, a socio-economic regional diagnostic and a biodiversity study, all with the active participation of national and international research institutions. A multifaceted program for capacity building was implemented to support grassroots organizations and local leadership. These activities were developed to support a long-term process for a regional sustainable development program.

The Antamina Project

An important mining operation, which is currently redressing past problems and can be considered a best practice in Peru, is Antamina. As summarized by Farfan (2004), in 2003 Compañía Minera Antamina selected a group of independent entities to evaluate the implementation of its policy for resettlement and land acquisition of two of the surrounding communities in 1998. This study demonstrated that although the company had made a major effort, there were several weaknesses in this process. The loopholes identified were: (a) there had been no informed consent undertaken with the communities; (b) the company had little involvement in the way the money received in compensation for land was invested; (c) a land-based or land-for-land principle had not been effectively carried out, and (d) vulnerable and movable groups had not been appropriately identified and a strategy to deal with them was not in place.

As a result, the company decided to reopen the files and address the main outstanding issues that could be dealt with. The company started a comprehensive program that is still in operation. World Bank[120], local and international experts were brought in to provide insights about other experiences and implement the framework of the World Bank resettlement policy. The main activities that took place as part of this process are detailed below:

Baseline Information

Although the resettlement process occurred in 1998, by 2003, there were still a number of families that needed to be resettled. When the initial resettlement discussions and negotiations were held with the communities, Antamina had commissioned an independent group to collect all relevant baseline information and identify key performance indicators that would be used in later stages. The methodology used determined family ties and reciprocity linkages that contributed to the well-being of the families. An interesting finding was that this reciprocity constituted almost 80 percent of the family income. If this baseline had not been carried out this way, the company would have misinterpreted the data[121] and potentially failed in the latter stages of development.

Capacity building and training for informed consent

The company also realized that it needed the assistance of a second independent entity to train and inform these families before the process of resettlement occurred. This independent entity was able to tailor the language and graphical information to explain the project, World Bank

[120] The Antamina Company has received a MIGA guarantee loan.

[121] Most baseline studies do not take reciprocity issues into account, which can lead to a series of complex issues once land purchasing and resettlement takes place or when an operator wants to rebuild the community in another area.

policies, and obligations and rights. One of the aspects that took a significant effort to convey was the "land-for-land" principle. As expected, compensation requests were initially couched in monetary terms and offered very little sustainability for the future, posing additional risks for the company. However, through intensive consultations, the families came to understand that the best mechanism for land purchasing and resettlement was a land-for-land exchange, accompanied by a development project.

Family Graduation System

The introduction of a system for graduation of the families affected by the mine is perhaps one of the most fascinating innovations that Antamina is currently involved in. The company, with assistance from the World Bank, is seeking to develop a system for evaluating when the displaced families are ready to live without the help of the mine. In order to develop this system, a group of experts designed a series of indicators (food security, health, income generation) to be evaluated over the years. Antamina is probably the first mining operation that has implemented OP 4.12 and, as expected, some grey areas were identified that have been adapted to local circumstances.

Finally, the most important lessons learned from this process are:

- At least one year should be spent on capacity building prior to negotiations and resettlement compensation, given the importance of the process of land purchasing and resettlement and the difficulty of finding a common language with the communities.
- In situations where the land-for-land principle is difficult to apply, specific efforts need to be made and specialists need to be involved to provide communities with alternatives for income generation and food security.
- The principle of land-for-land is sometimes non-applicable or difficult to apply in communities in the high Andes (above 4,000 m.a.s.l.), where land is scarce and has little productivity.
- Additional methodologies are needed in order to reach a more appropriate definition of the responsibility of the mine with respect to the graduation of families.
- There is significant value added when communities are independently advised. This is reflected in increased trust in the project and company.
- Land boundaries should be well established before the development of a mining investment; otherwise there may be tension among local residents who seek to make the most of their property.

RECOMMENDATIONS TO ADDRESS KEY SOCIAL ISSUES

The following recommendations address each of the key social issues identified in this study. However, it is important to note that most of these issues are interlinked and thus in some instances the recommendations are overlapping. The recommendations indicate each stakeholder's role and responsibility in carrying them out and the framework for the recommendations is the life cycle of mining operations: from initial exploration to mine closure.

1. Unfulfilled expectations for employment and benefits - Recommendations

Before first contact is made between a mining company and the local people, the government should establish a formal process that goes beyond informing the communities about the new

prospects. This process should help to educate the local residents about the basic economics of mining—the limited job intake capacity; the potential for benefiting the community through an agreed process of compensations that would occur within a process of local development with the active participation of the affected population; the potential for the creation of local services for the mine; and the distribution of royalties and canon.

The initial contact should not be left to the mining company. The best way for the government to show respect for the local people and enforcement capacity is to lead this process and help establish the guiding principles that will govern the future relationships between the mine and the local people. In this regard, *Decreto Supremo* 042-2003-EM on "Prior Commitment," which seeks to define the framework for relations between the investor and the affected people, does not allocate a role for the government at this crucial early stage of contact. Part of the content of this new regulation is similar to the Code of Conduct of several mining companies and also to the one promoted by the SNMP, and it is a good step towards creating an adequate scenario conducive to the improvement of trust and transparency, yet it is still insufficient. Not including government at this critical stage allows for an interpretation that the institutional arrangements, which should be the responsibility of government, are instead being transferred to a third party (the private investor), thereby privatizing any potential conflicts (Bernales 2004). The government should trigger this initial consultation process, not the private sector, since government owns the natural resource and it should be setting the rules of the game for resource extraction.

The recent cases of Bayóvar and Las Bambas mining projects show a more appropriate approach that should set the standard for future projects. In both cases, agreements were reached among the local communities, the regional governments, the MEM and Proinversión (the entity responsible for government tenders), through a negotiation process prior to the licensing of the projects.

Therefore, the government should consider the need for an initial phase of information and consultation with the local stakeholders, in which they are informed about: (a) the main features of the project; (b) the legal framework that regulates the relationship between the mine and the local affected population; (c) the participatory process for the preparation of the EIA/SIA and the consultation that the mining company will carry out in accordance with national legislation; and (d) the ensuing process of negotiation. This early phase should also be an opportunity for the government to identify the local capacity-building needs regarding these processes and the potential for the intervention of a third party to assist the local communities throughout these processes, such as the *Defensor del Pueblo* (National Ombudsman) or an official overseer.

At this early stage, the government should be in a position to provide the bidders with social baseline information so they are aware of the social, economic and cultural characteristics of their future local stakeholders.

There is a need for the mining operators to formalize the process by which agreements are reached for both the local employment policy to be implemented and the benefits the mining company will provide to the local affected stakeholders. This should be carried out taking into account the various phases of mining. At the exploration stage, agreements on benefits should be framed by the nature and the temporality of the intervention, but should also try to address the long-term development priorities of the local communities as much as possible.

Box 10. Local Economic Development (LED)

Local Economic Development (LED) can be defined as the devolution of the economic functions of promoting social and economic development to the local government. The main LED 'developmental duties' of local governments and municipalities are to 'structure and manage administration as well as budgeting and planning processes, giving priority to the basic needs of the community, and promoting the social and economic development of the community' (World Bank: 2001)[122]. LED allows local government, the private sector, the not-for-profit sectors and the local community the opportunity to work together to improve the local economy, focusing on enhancing competitiveness, and thus increasing sustainable growth; and also on ensuring that the growth is inclusive. LED encompasses many different disciplines, such as planning, economics, and marketing. It also encompasses many local government and private sector functions including planning, infrastructure provision, real estate development and finance. The practice of local economic development can be undertaken at different geographic scales. A local government pursues LED strategies for the benefit of its jurisdiction. However, individual communities, and thus individual areas within a local government's jurisdiction, can also pursue LED strategies to uplift their own communities. These are most successful if pursued jointly with the local government strategies (World Bank)[123].

Local governments, NGOs and the community should first evaluate the demographic, economic, business environment, current infrastructure and ongoing regional and national development programs and then use this information to determine the most feasible and efficient development initiatives to implement within a particular community. Some types of LED programs are listed below:

- Improve municipal legislation & services through review of business regulation & requirements
- Clean-up Brownfield sites for industrial redevelopment
- Provide training & support facilities to develop local business
- Establish & promote a Local Purchasing Initiative
- Develop seed-finance & lending programs for entrepreneurs
- Identify & produce a directory of sources of financing for local businesses
- Undertake local skills survey to develop an area-specific program to encourage business start-ups
- Establish incentive program that allows yearly tax exemption from municipal duties for Small and Medium-sized Enterprise (SME) exports[124].

However, to ensure the success of these LED initiatives, the project planning and implementation must be integrated, including social, environmental and economic issues. Likewise the LED program must be carefully devised, incorporating the ideas of all stakeholders, and there should be a range of projects, short, medium and long-term, to boost confidence. In addition, influential local leaders should be the champions of projects and display commitment and strong political will for project implementation, and local management capacity building should also be promoted. Furthermore, political financial and technical support from all stakeholders should be obtained to ensure their commitment and only projects with responsible and dedicated managers should be implemented (LED). These LED initiatives have been implemented on a limited scale near the Yanacocha mining site and are taken into account in Alto Chicama's EIA, and should be implemented on a larger scale in Peru with the cooperation and commitment of mining companies, the local governments, NGOs, and local inhabitants in order to ensure sustainable economic development and growth once mining operations have ceased.

From the first stages of mining operation and throughout the entire life cycle of the mine, both short-term physical infrastructure works that will benefit local communities and long-term local development (LED) projects, such as local capacity building, should be implemented to promote sustainable development. In this regard, *Decreto Supremo* 042-2003-EM on "Prior Commitment" established the guiding principles for buying local goods and services and hiring

[122] "What is LED? National Government and Local Economic Development Initiatives in South Africa." World Bank 2001.
[123] "Defining LED" Urban Development. World Bank 2001. http://www.worldbank.org/urban/led/defining.html
[124] "Local Economic Development Primer" (LEDP) December 2002.

local workers, but in order to make these principles plausible, capacity building is needed to enable local enterprises to enter into supply contracts with mining companies and supply quality goods as well as training programs to endow local workers with the necessary skills to be employed by the mining company. These types of LED programs are mutually beneficial because they will encourage mines to use and purchase the goods and services of their area of influence for their operations and personnel needs, which will in turn increase economic development and employment opportunities for the local community per se.

Mining operators should, to the extent possible, avoid compensating affected communities with cash payments and instead should seek to support their development priorities. Formal benefit agreements should have a participatory monitoring mechanism in place to ensure compliance and timely interventions to improve its implementation. Improved participation of stakeholders during each phase of the mining cycle beginning with the design phase can provide an improved environment for identifying, assessing and mitigating undesirable impacts and risks. It can help to identify appropriate mechanisms for stakeholder engagement and potentially enhance mutual confidence by extending the commitment of proponents to different schemes of participatory monitoring. Today, these processes are voluntary in nature, going beyond the regulatory framework. These schemes are thus contributing to enhanced trust and dialogue between mining companies and communities. Tintaya and Yanacocha are examples where to some degree of participatory monitoring processes has taken place. Likewise, the Camisea Gas project illustrates how this process of participatory monitoring has taken place in the design phase.

Box 11. Yanacocha Local Economic Development (LED) Strategy

Minera Yanacocha, which is located in the Northern Region of Peru (Cajamarca), is Latin America's largest gold mine. The company directly employs 1,500 workers and an additional 5,000 indirectly, through contractual work. Most of these workers are Peruvian and 60% of them are from Cajamarca (World Bank: 2003)[125]. Yanacocha currently implements two LED programs, the Rural Development Program and the Urban Development Program, to improve health care, education, agriculture and micro-credit. The LED programs have involved a variety of stakeholders, NGOs, rural communities, and the provincial government. Thus far, Yanacocha has invested over US $15 million dollars, while other external donors have given US$7.3 million for LED projects (World Bank: 2003). Furthermore, Yanacocha is creating the Cajamarca Development Foundation, along with other stakeholder groups, to consolidate the different LED programs.

In addition, the World Bank Group's Small and Medium Enterprise (SME) Department has developed a LED program to help create a diversified and sustainable economic base for the area through the promotion of supply chain development, capacity building and access to finance. The program tries to utilize local knowledge to deliver products and services, and a SME coordinator is in charge of maximizing benefits and ensuring stakeholder commitment. However, a key problem with Yanacocha's local purchase initiative was the inability of the local community to fulfill Yanacocha's goods and services demands due to the poor quality of local goods or the inexistence of needed inputs. In order to fix these market failures, local SME suppliers are undergoing a quality management training program to enable them to meet international product standards, increase productivity and improve management skills, which should help them obtain future supply contracts with Yanacocha. Some of the key LED programs are:

- Construction training program to equip workers with modern construction technology & know-how for participating in the large housing complex development being planned;
- Building capacity of local farmers to supply produce to the mine's canteen, neighboring hotels & restaurants;

[125] "The Minera Yanacocha S.R.L. Project in Peru: Project Highlights". World Bank 2003.

- Plan to provide technical support & training to local agribusiness producers & business intermediaries to raise the quality of products;
- Planned technical training program and support for local ceramics & textile artisans to modernize skills and production & create linkages with domestic & international markets;
- Study and Analysis of developing new financial products & services for the local SME market to provide credit for supply contracts, investment funds and start-up capital (World Bank: 2003).

Benefits for the affected people should also come from the *derecho de vigencia*, the *canon minero* and the recently approved royalties. However, a main concern of all stakeholders is that part of these revenues may end up financing the salaries of the local bureaucracies instead of funding the development priorities of the local communities. To help prevent this, the government should establish fiscal mechanisms to oversee the use of the canon and the new royalties to help ensure that these funds are directed to supporting the community plans for development as established in the law of the *canon minero*. In this connection it is also worth recommending that the law of the *canon minero* be amended. As it currently stands, the canon is supposed to be invested exclusively in infrastructure. However, the needs of local communities are more varied and complex than infrastructure, as that word is usually understood. The canon and the royalties should also be used to finance the capacity building required by local communities to ensure adequate management of local business and long term sustainability of the benefits of mining[126].

2. Land acquisition and resettlement impacts - Recommendations

The first step that the government should take to prepare for the licensing of new projects is to invest in the titling of lands in those areas identified for future mining projects and to assess the juridical conflicts that may be present in these areas regarding land tenure. In advance of the bidding process for new mining projects, the government should clarify, with the participation of the local land owners (private farmers and/or communities), the legal situation of land tenure and land use, resolve land boundaries, and register and deliver titles if needed. The second step would be to include, as part of the bidding documents, as much information as possible on the specific situation of land tenure and land use in the future area of operations.

The next step the government should take is to review, with the participation of international experts, the current regulation on *Servidumbre Minera*, the law that gives the access right for land use, which, as we saw above, contributed to the creation of tensions and misperceptions among affected communities. Next, the government needs to prepare guidelines for the mining companies on land acquisition and resettlement processes, which should be based on best practices in the sector, the resettlement policy of the World Bank and the ILO Convention 169 for Indigenous Peoples, which has been ratified by the Peruvian Congress. The government should also evaluate the possibility of requesting the participation of an independent third party, such as the Defensor del Pueblo (Ombudsman), the Catholic church or an experienced NGO to supervise the land acquisition or the resettlement process to ensure compliance with the legal framework and the agreements reached with the affected people. In addition, the mining operator should establish participatory monitoring to follow up on these complex processes.

Mining operators should implement these processes bearing in mind the land-for-land principle, particularly in situations where land is the only means of livelihood available to the local people or where land use patterns are predominantly communal. The application of this principle should be carried out together with a support program to ensure land productivity and the well-being of those affected by land intake.

[126] Discussed further in Chapter Five.

Regarding past conflicts created as a result of land acquisition and/or resettlement, the government, in partnership with the responsible mining operator, should establish a review process to implement corrective measures in order to reconcile interests and reach new agreements to the satisfaction of those involved, as in the case of Antamina (see above).

3. Lack of adequate communication between companies, communities and the state in the licensing process - Recommendations

The lack of an adequate flow of information in the mining projects licensing process can only be properly targeted if communication is addressed as being embedded in the actual interaction between the main stakeholders involved in the sector: the government, the industry and the affected populations. Any attempts to fill this gap through the implementation of a communication strategy in the form of a private or government initiative outside the licensing process runs the risk of being perceived as a public relations exercise that will not contribute to gaining the trust of the affected people and civil society at large.

As stated by Carvajal (2004), there is an important difference between providing information and communication: providing information does not ensure that a message will be understood in a community or that the information will be disseminated widely. How the information is communicated, the process of communication, an individual's ability to access and use information and the prior relationships between mining companies and the community, may all affect people's understanding of information.

In order to have an adequate communication flow, the information provided by the government and the mining company should be timely, sufficient, suitable, and necessary (Carvajal, 2004).

Practical experience from extractive industries shows that the flow of information should start as early as possible so that people can think about the issues, consider implications, formulate their views and be able to participate actively in the licensing process. Likewise, the information should be disseminated when the decision to develop the project is made. The information should be updated every time changes are introduced during the mining life cycle. It is also important to consider the time required by the population to acknowledge and discuss the project and develop a group or personal point of view in order to make pertinent observations or suggestions. Ensuring the opportunity for the affected people to participate in a dialogue during the early preparation stage of the EIA process enables the operator to manage expectations, detect any potential serious conflict and help resolve issues before they lead to conflict, reducing financial losses due to delays.

Sufficient information should be provided in accessible and culturally-appropriate ways. The information is sufficient when it is disseminated at an appropriate level of detail. As part of the process, the mining companies need to adopt an open and transparent position regarding project information and fully disclose all aspects of the operation to ensure that the community understands what is going on and there are no surprises.

The characteristics of the stakeholders involved in the mining proposal must be taken into account in order to identify the information that should be given to each stakeholder group. A more informed public will understand the trade-offs; be able to contribute meaningfully to project design; and have greater trust in the mining company. Such information should be disseminated through means that are suitable to the local stakeholders. For instance, even though newspapers

can be a valuable communication instrument in urban areas, in rural areas given higher levels of illiteracy and the use of indigenous language, it is better to disseminate information on the mining project by means of local leaders, community meetings, the radio, brochures or information releases in the church, community centers and market places.

Information is necessary when it refers to the mining project that is going to be developed. The population must know the scope of the proposal including issues such as: types of processes, continuous or discontinuous operations, impacts likely to occur, prevention, control and mitigation measures to be adopted, and enforcement execution, among others. It is well documented that information disclosure leads to increased community empowerment; increased management attention to social issues and eventually, improved environmental and social performance. As Carvajal states (2004), access to information–or the right to information–is a crucial issue in the functioning of the entire system of consultation and participation. In this regard, the mine operator should guarantee that:

- All stakeholders and particularly affected populations understand the process by which the mining project will be developed; and that the population is informed about the changes made to the original proposal, and about progress in performing environmental studies, before they are completed.
- The affected population knows if their opinions, suggestions or expressed points of view were taken into account or rejected. They should know the grounds for such decisions.

Communication should be established with a varied group of stakeholders, depending on the scope and size of the mining project. For large projects, besides the locally affected population (including local institutions such as the churches, municipalities, etc) and the central government, communication strategies (both the mine operator's and the central government's) should target the local and regional governments and civil society at large, with particular emphasis on national environmental NGOs, social organizations representing indigenous peoples and human rights groups.

When interacting with the local affected people, both the government and the mining company should approach the community as openly as possible, avoiding privilege for the local leadership and making all transactions and agreements in a collective manner, never behind closed doors.

The mining operators should establish company-community liaison committees to discuss plans and their implications and incorporate appropriate decision-making procedures into their operations. In addition, the MEM should develop guidelines on emergency prevention and response. They should cover ways to establish good lines of communication for warning local communities, sufficient recognition of potential impacts, and adequate monitoring and maintenance[127].

The mining operators should produce annual audited information on their environmental and social performance, with clear indicators regarding the implementation of both the Environmental Management Plan and the social agreements on compensation and benefits reached with the local communities.

The government should evaluate the possibility of establishing a clearinghouse with information about current and future mining projects, so that any interested citizen or organization can access information related to project design and implementation, environmental assessments and

[127] "Striking A Better Balance: The Extractive Industries Review". Executive Summary. November 2004.

mitigation plans, compensation arrangements, support to local communities, performance indicators, etc.

Since there is a gap in the legal framework regarding standards for communication and because there are no government guidelines that mining operators could use for establishing communication strategies, both the government and the industry should assess the possibility of producing such guidelines or create mandatory regulations for this purpose.

As summarized by Carvajal (2004), a best practice local scenario for communication is one that provides the community with information on environmental and social issues in a mining operation, achieving a very high level of transparency. In such scenarios, community-based environmental and social monitoring groups are formed and they have access to and, preferably, participate in, environmental sampling, the review of results, and in making recommendations to improve measurement and management systems. Similar groups can also monitor or make recommendations regarding ways in which the mine may assist community development and the creation of social capital[128].

Community members who are informed and involved in the mining life cycle can become part of the project, reducing the potential for future conflict and reducing investment risks. If community members are informed, there is a greater likelihood that potential issues will be identified at an early stage in the mining life cycle, allowing the mining company to respond to concerns. When community members are well informed about mining development, local needs and strengths can be identified. These strengths can be leveraged and local opportunities for growth can be pursued.

4. Weak enforcement of regulations or even absence of the state - Recommendations

As noted above, the decentralization process may help to create better conditions for a more prominent presence of the government in the local scenarios of mining operations. Also, the support that the PERCAN Project is providing for the regional offices of the MEM should translate into more efficient intervention at the local level. However, there are several additional steps that the MEM can and should take to improve the licensing process, ensure better regulation enforcement and enhance its role in the sector at the local level. As mentioned earlier, primarily, the MEM should reinforce its role as a provider of information and prepare guidelines for the industry on how to address the most critical social issues, particularly social assessment as part of the EIA process, the quality of consultation, land acquisition agreements, resettlement processes, compensation agreements, local employment policies and partnerships with local businesses.

Several experts recommend the inclusion of respected third parties to bring transparency to the agreements between mining companies and affected communities for local monitoring, land acquisition, compensation plans or benefits. In this respect, the government should assess the possibility of appointing a Sector Ombudsman who would not only have the role of overseer, but also mediate conflicts if the parties involved voluntarily agree to this. Given the current and potential conflicts that the sector is experiencing, there is a need for a mediator outside the government structure, since at present the government is perceived as being part of the problem.

[128] Examples of these types of community-company collaborations include the Social Fisherman Monitoring Group in the Camisea Project in Pisco by Pluspetrol and the community environmental groups created around San Marcos and Huarmey by Antamina.

A Sector Ombudsman, similar to the Ombudsman created for the Camisea Project, would not replace the government and therefore would not take over its enforcement role, but would contribute to absorbing and channeling tensions and conflicts and helping the parties find middle ground. Currently, there are no formal mechanisms to resolve environmental and social complaints in the mining sector outside the judiciary.

The appointment of an Ombudsman for the mining industry, as proposed by Carvajal (2004), is an opportunity to advance the Peruvian mining agenda on environmental and social issues and to achieve effective changes in the way business is done. An Ombudsman would meet industry needs for preventing and resolving disputes in an extra-judicial forum, and would help affected stakeholders by ensuring their voices are heard. It would provide a complaints mechanism whereby affected stakeholders could submit their claims and the industry could cooperate in the investigation of non-compliance, which would serve all stakeholders.

The success of the proposed Ombudsman depends on several key factors, including the trust of affected communities and industry cooperation. It is possible to gain the trust of affected communities and local NGOs by appointing the right person, conducting an adequate outreach program, and clarifying processes and outcomes. It is not, however, clear whether industry cooperation will be forthcoming, as this element depends on a voluntary commitment to sustainable development. For a detailed description of the mining Ombudsman, see Appendix 12.

5. Lack of local capacity for negotiating and management - Recommendations

Capacity or the lack of it is a transversal issue that is at the basis of most processes involving stakeholders in the life cycle of a mining project and it is one of the most critical bottlenecks for carrying out an adequate consultation process, reaching sound agreements on monitoring and benefits, and achieving an understanding of both the way mining projects operate and the legal framework that defines the roles of stakeholders.

Local stakeholders (community leaders, local authorities, social organizations committees, local NGOs, etc.), generally need capacity building in order to participate meaningfully in the mining project cycle and provide feedback to the mining operators, the government and their constituencies.

On a project-by-project basis, the government, in partnership with the respective mining operators, should assess the specific needs for capacity building and then develop a serious process of supporting training activities for local stakeholders that should cover at least the following themes:

- The legal framework of the mining sector and the rights and obligations of affected communities;
- The EIA/SIA process and the decision-making process in which stakeholders can participate;
- The monitoring of the industry's mitigating measures and institutional arrangements for local stakeholders to participate in them;
- The process of negotiations to reach just agreements on compensation and benefits;
- Management of funds for local development;
- Follow-up mechanisms to ensure that revenues from the *canon minero* and the royalties are used to support local community development;
- Technical training to enhance local manpower for mining and related activities; and

- Creation of local services for the mine, such as production of vegetables and poultry for the mine personnel.

These capacity-building activities could be implemented through specialized local workshops run by independent technical entities, regional meetings led by regional authorities, consultation meetings with local communities, and/or with the use of handout materials such as, booklets, leaflets, etc. The granting of scholarships for specific technical training should also be part of these efforts as well as inviting local leaders to visit mining projects that implement best practices. The Defensor del Pueblo or the Sector Ombudsman, if it is created, as well as CONAM and SENATI (depending on the type of capacity building activity), should be involved in leading these efforts, together with the MEM, and with the support of the mining operators.

Perhaps one of the main concerns of central government authorities and mining operators regarding the distribution of revenues to local communities is that there is no local capacity or transparency to manage this flow of funds—there is a permanent risk that the revenues would be spent on the salaries of the local bureaucracy, instead of being directed to the development priorities of the affected population (see Chapter 5 for further details).

The Bank can also provide, upon request, technical assistance to the MEM for preparing specific regulations and accountability mechanisms for the local management of funds.

6. The negative social perception of mining – Recommendations

As noted above, the generalized perception among civil society is that mining is a polluting activity. In the survey conducted by Recharte et al (2003) in several mining areas, 55 percent of the local people interviewed considered that it is not possible for mines to operate without contaminating the surrounding area, while only 37 percent answered that it is possible to mitigate the environmental impacts of mining activities (regardless of the actual environmental impacts of mining activities in their areas of residence). The research team also noted that people's knowledge about the environmental impacts of mining was superficial, and that their approach to the subject was characterized by more doubts than certitudes.

This generalized view of mining as being inevitably polluting is probably due to the environmental legacies of past operations and the unresolved social conflicts that have been triggered since then (Table 23.). Modern mining practices can show much better standards, but they are not enough to counterbalance such a negative view. The government, in partnership with mining operators and the international community, should assess the possibility of launching a special fund to support the remediation of these environmental legacies and reach compensation agreements with the affected populations (see Chapter 5).

In addition to this fund, the government, in partnership with incoming mining operators that will manage new projects such as Las Bambas, should create pilot experiences to implement best practices and the recommendations of this study. If successful, these projects can serve as showcases for other mining operators, local leaders, local authorities and NGO representatives from around the country to visit and extract lessons to apply in their own sites. This is the most effective way to create demonstration effects and encourage a more balanced view of the mining sector. Both the government and the mining industry need to make a concerted effort to show civil society that it is possible to develop mining in a responsible and sustainable way.

Having examined the scope of the mining legacies problem, the tools and capacities for addressing them, and the main social issues and needs, this study now turns its attention, in Chapter 5, to perhaps the most promising long-term remedy for overcoming the obstacles to optimal expansion of Peru's mining sector: rational and transparent allocation of the proceeds.

CHAPTER 5 FISCAL TRANSPARENCY AND RATIONAL USE OF MINING PROCEEDS

INTRODUCTION

As mentioned in the Executive Summary, mining is one of the most important activities in Peru, accounting for over half the country's exports and representing 6.6 percent of the Gross Domestic Product (GDP) in 2003. Moreover, it contributed to over 4.5 percent of government tax revenues in 2003 and attracted important investment flows to the country[129]. Projections made by the SNMPE indicate that this trend is expected to increase in the future[130]. According to the Multi-annual Macroeconomic Framework (2005-2007), it is expected that metallic ore extraction will peak due to the high levels of production of the main projects, investments made in previous years and new prospects such as Las Bambas and Bayóvar. Thus, during 2005-2007, it is foreseen that the sector could grow at an average rate of 6.6 percent, powered, mainly, by the initial operations of the Alto Chicama project, the extension of Carachugo, and the Cerro Negro development by Yanacocha. New copper projects are also expected to emerge, such as Cerro Corona of Gold Fields, an extension of Cerro Verde (primary sulfur project) and new zinc projects, such as Cerro Lindo (Milpo), San Gregorio (Brocal).

The Peruvian mining sector reform of the early 1990s attracted substantial exploration and a subsequent increase in mineral production and exports. While global exploration investment went up 90 percent and grew fourfold in Latin America, between 1990 and 1997 in Peru it grew twenty-fold. Due to drastically lower metal commodity prices starting in 1997, the share of exploration investment of most developing countries was reduced substantially since most international mining companies retreated to their traditional exploration areas. Yet Peru was able to keep its share of the total. This increased investment during the 1990s doubled Peru's mineral output and revenue from its mineral exports.

As reported throughout this study, interaction between the main stakeholders has not been smooth, despite the outstanding growth and performance in the sector. A pervasive lack of trust contributed to the tension, much of it the product of poor communication, but much of it also due to a sense of injustice and inequality, exacerbated by the lack of transparency.

The large growth the mining sector in Peru has generated large revenues for mining companies and for the GOP (through mining sector taxes) and, according to the law, a portion of this revenue is to be distributed to regions where the extraction of mineral resources takes place. Consequently, it has been determined that promoting transparency in the distribution and use of these funds is essential to ensure trust among stakeholders.

Paradoxically, mining enterprises are widely regarded as being among the most regulated and transparent industries in Peru[131]. In addition, it is recognized that mining companies are among the highest taxpayers in the country. A part of these fiscal contributions is then transferred to local and regional governments. However, there is a general belief that mining activities do not bring the people benefits, and that these resources are not efficiently allocated. In turn, these doubts have led to multiple revisions of the law (a new modification to the Canon law has been

[129] This amount does not take into account smelting nor aggregate mining.
[130] Sociedad Nacional de Minería, Petróleo y Energía (2004). Reporte Estadístico Mineroenergético. First quarter 2004.
[131] Mining companies that are listed the stock market are periodically audited and inspected by the Lima Stock Exchange, and some even by the New York Stock Exchange.

enacted.[132] which can undermine the stability in the rules of the game, discouraging mining investment and causing local governments and civil society to question the Central Government's canon distribution criteria.

At present, there is a high level of fiscal transparency involving mining firms because almost all of the companies are listed on the Peruvian and international market exchanges and their annual reports are therefore audited and published. Likewise, the SUNAT (National Superintendency of Tax Administration) recently published its tax collection by economic sectors. Nonetheless, this information is not available to all citizens (particularly those in rural areas) because the figures are on websites and publications that are not available everywhere in the country. Another problem is the complexity and aggregation of the data presented. Many people in Peru do not have access to computers and cannot get the information in an appropriate manner outside major cities or in the areas where the mining firms operate. Consequently, there is a need to further promote the dissemination of information to interested groups, particularly to communities affected by mining activities.

While on the one hand the mining sector is considered to be one of the most transparent and at the forefront of disclosure of information (particularly with respect to the fiscal status of mining companies and the MEF's efforts to publicize revenue distribution), on the other hand it is worth noting that the fiscal structure of the sector (mining taxes, revenue distribution, etc.) suffers from:

(i) Complex mining tax revenue calculation and distribution criteria;
(ii) Rigidities in the criteria governing investments for which canon proceeds may be used, and a lack of local capacity for revenue management and project implementation, and
(iii) Low information disclosure by main stakeholders and inadequate knowledge about the uses of the mining tax revenues by local governments.

In the following sections these factors will be further discussed, with a comprehensive description of how they currently function and affect stakeholders' perception of mining activities. Alternative ways of linking these mechanisms to the treatment of environmental problems, such as using market based instruments to encourage mining companies to meet environmental performance standards, are also presented, along with actions currently underway that help strengthen transparency in the mining sector. The chapter ends with recommendations on how to tackle these problems and proposed actions to improve the relations between all interested parties, as well as possible mechanisms for using mining proceeds to address environmental and social issues.

SOURCES OF MINING PROCEEDS

Mining firms in Peru are subject to an extensive package of taxes and contributions, converting the sector into one of the main sources of funding for the State. However, what distinguishes mining from other sectors is that a portion of these taxes is earmarked for the local governments of the localities where the resources are extracted[133]. Therefore, the calculation of the amount that mining and other extractive companies should pay as taxes (especially income tax) is a

[132] During the last three years, there have been 5 modifications to the Canon law, in addition to a Constitutional reform being passed by the Congress. Nineteen proposed law modifications regarding the Canon were consolidated into one initiative and are now currently under discussion in the Congress.
[133] canon is also applied to gas and forestry

delicate matter, since it affects the budget of more than a thousand local governments in the entire country (1516 municipalities in 2003).

In order to understand the particularities of the Peruvian tax system and ways to enhance transparency in fiscal transactions (and to explain how mining proceeds are calculated), it is necessary to understand the general legal, regulatory and tax structure, as well as its rationality.

THE TAX REGIME FOR THE MINING SECTOR

The tax regime for the mining sector has two principle objectives: to increase tax collection and to regulate the behavior of the taxpayers.[134] In the first case, the government looks for the balance between its tax collection needs and the establishment of a positive system that seeks efficiency and equity and encourages foreign and national investment. In the second case, the government seeks to give guidelines so that the taxpayer can maintain policies that are consistent with the conservation of the environment and corporate social responsibility. Internationally, to achieve these goals different taxation tools are used, such as the offer of tax incentives to offset the cost of actions that contribute to environmental conservation. Tax penalties are also used to discourage practices that negatively affect the environment.

In the case of Peru this rationality is not operating effectively. However, it is important to establish differences between the legal structure that regulates mining activity and the actual tax regime applied to the mining sector. The legal norm that regulates the sector is Supreme Decree No. 014-92-EM, issued in 1992. It details the laws governing the mining sector in Peru and includes the minimum criteria that this activity must observe to guarantee its contribution to the sustainable development of the country[135].

In spite of a clear legal base structure, difficulties arise from the intense competition between Peru and its Latin American neighbors to obtain foreign investment in the mining sector. Since mining activity contributes significant amounts to annual GDP in many of these Latin America countries, there is an intrinsic dependency on mineral exports. Therefore, establishing attractive tax structures in order to obtain mining investments (domestic and foreign) is deemed essential. These attractive tax structures are often characterized by a lack of environmental and social norms, since state intervention through mining sector regulation is considered to discourage private investment through competitiveness losses. However, it is usually a lack of clarity and stability in the rules of the game (fiscal tax structure and licensing regulations) that are the real culprits that discourage mining investments. Hence the GOP should ensure predictable costs for good environmental citizenship for mining companies through a stable tax regime in order to build a more harmonious relationship between the government, mining companies and local communities and to create a better investment climate.

With this in mind, the Legislative Decree for the Promotion of Investment in the Mining Sector (D.L. 708), passed in 1991, gives many benefits to mining investors, including: administrative, tributary and exchange rate stability (through the adoption of the most favorable exchange rate at the time); tax deductions for investments in public infrastructure and in the social welfare of employees; liberty to ship utilities outside of the country and free availability of foreign monies; free internal and external commercialization; and nondiscrimination with respect to the other sectors of the economy. This law permitted joint-venture agreements and, based on the size of

[134] Otto, James M. *Mining Taxation in Developing Countries*. UNCTAD. 2000. p. 1

[135] In the fourteenth and fifteenth titles, there are provisions regarding welfare, security and environmental conservation.

investments, gave tributary stability for medium and small companies; established the payment of US$2 per hectare as the valid concession fee (*derechos de vigencia)* (now US$3 per hectare). Nonetheless, environmental aspects were left aside in this decree, wasting an opportunity to link these fiscal incentives to good environmental performance.

Presently, the mining sector of Peru has a high tax burden that generates a considerable amount of resources for public entities. The following section takes a close look at three of these taxes, since they are closely related to mining activity and have the local governments as their main beneficiaries. These are: (1) the income tax (the source of the mining canon); (2) the mining royalties; and (3) the *derechos de vigencia*

In Table 24 below, we can see that the taxes paid by the mining sector have increased because of the positive performance of international minerals prices and due to the start of new mining projects. Thus, the mining sector has increased its payments from 641 million soles in 1998 to 1,101 million soles in 2003. One year's tax receipts are the base for the following year's canon.

However, it should be noted that although the mining sector is the fourth largest overall tax payer in Peru (after manufacturing, services and commerce), in terms of income taxes, it is one of the top contributors. For this reason, it is advantageous that SUNAT shows the figures per tax because it increases transparency and allows citizens to be informed about the actual fiscal contribution of the mining firms.

Table 24. Domestic Taxes Paid by Economic Activity

REVENUES COLLECTED BY SUNAT - DOMESTIC TAXES ACCORDING TO ECONOMIC ACTIVITY
(millions of nuevos soles)

	1998 TOTAL	1999 TOTAL	2000 TOTAL	2001 TOTAL	2002 TOTAL	2003 TOTAL	2004 Acum
DOMESTIC TAXES	**17,092.6**	**16,202.5**	**16,866.6**	**18,061.6**	**18,734.0**	**21,376.1**	**14,132.1**
Agriculture and Livestock	**146.6**	**137.9**	**149.0**	**191.3**	**216.6**	**276.9**	**167.1**
Fishing	**66.0**	**50.0**	**85.7**	**77.1**	**115.0**	**138.5**	**132.8**
Mining and Fuel	**2,139.3**	**2,053.1**	**2,304.6**	**1,195.4**	**1,010.2**	**1,754.7**	**1,633.7**
Mining	641.1	503.2	699.3	612.8	689.1	1,101.9	1,089.2
Fuel	1,498.2	1,549.8	1,605.3	582.6	321.1	652.7	544.5
Manufacturing	**4,883.9**	**4,679.0**	**4,755.2**	**6,040.4**	**6,887.0**	**7,180.6**	**4,260.3**
Other Services	**6,809.8**	**6,469.4**	**6,756.3**	**7,905.5**	**7,671.0**	**8,714.5**	**5,794.4**
Construction	**785.0**	**701.9**	**693.8**	**586.3**	**543.8**	**742.8**	**366.2**
Commerce	**2,261.9**	**2,111.2**	**2,121.9**	**2,065.5**	**2,290.4**	**2,568.1**	**1,777.6**

Source: SUNAT – July 2004.

THE MINING CANON

In Peru, the mining canon was calculated, between 1997 and 2002, as 20 percent of the income tax paid by the holders of the mining activity title. However, this was modified according by the canon law[136] and the Supreme Decree that regulates it.[137] The mining canon is now "fifty percent

[136] Law Nº 28077.
[137] Supreme decree Nº 029-2004-EF.

of the income tax that the holders of the mining activity title pay for the exploitation of mineral resources"[138].

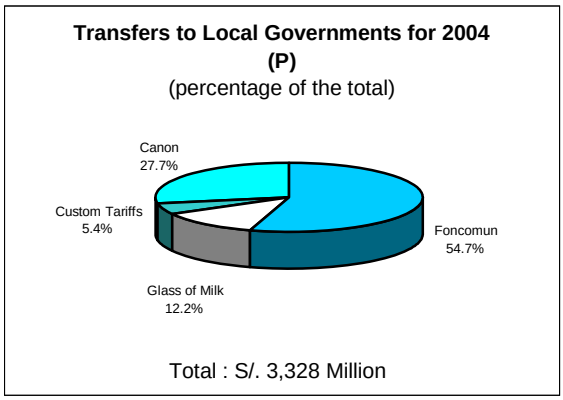
The canon is not an additional tax on the mining sector, but a mechanism for redistributing the revenues collected from mining companies anyway as income tax. There is, however, a very poor understanding among stakeholders of the criteria underlying the redistribution of income under this system.

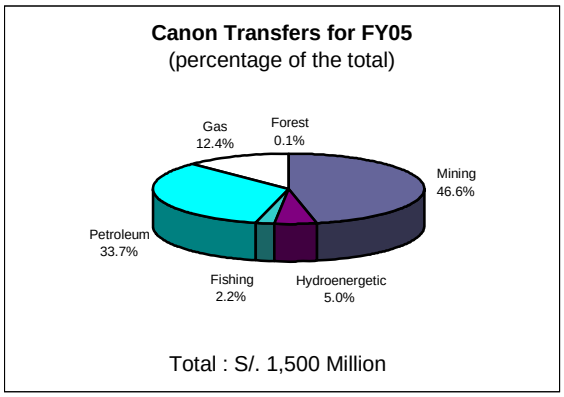
The current Constitution in Peru establishes that natural resources are national patrimony. This means that their ownership cannot be given to a private entity; therefore, the only thing that can be granted to a mining company is a lease or concession for the exploitation of the natural resources. In this manner, all extracted natural resources are rented goods in Peru and the rent must be paid to its "legal" owner, in this case, the government. In this context, the canon is one of the ways to redistribute the rent of these resources. The canon is thus considered to be a mechanism as by which regional and local governments enjoy a share of total revenues and rents obtained by the government through economic exploitation of natural resources"[139].

The main objective of any distribution of rent between the regional and local governments is to enhance efficiency. It is considered that decentralized expenditure decisions ensure better use of resources, based on a more exhaustive knowledge of the urgent and primordial necessities of the local town. However, in the specific case of mining, it is vital to keep in mind the direct consequences of the activity on the local environment (environmental liabilities and the social impacts). Nevertheless, municipal authorities seldom use a part of the canon transfers to mitigate the negative environmental impacts of mining activities. This issue will be further discussed in the following sections.

[138] Paragraph a), of the second article of Supreme Decree No. 005-2002-EF. This norm was modified by Supreme Decree No. 029-2004-EF. In this paragraph, the income tax is established as the canon base.
[139] Article Nº 1 of the Canon Law. Law No. 27506.

Figure 2. Importance of Canon Transfers





Source: CND **Source: DGAES-MEF**

The entire canon system is administered by the Ministry of Economy and Finance (MEF), which is responsible for calculating the amount transferred to each local government through an established formula.

MINING CANON DISTRIBUTION

In order to understand the distribution of the canon it is necessary to take a look at the political organization of the country. Peru is organized into 24 departments and one constitutional province (Callao). Every department is divided into provinces and these are divided into districts. The number of provinces is 198 and the total number of districts is 1829. In every district and province there are municipalities. The canon is distributed between the Provincial and District Municipalities and to the Regional Governments in whose district there is exploitation or use of natural resources. Under these terms, all transfers carried out to the Populated Centers will be made according to the Organic Law of Municipalities. To determine the influence area there are three criteria:

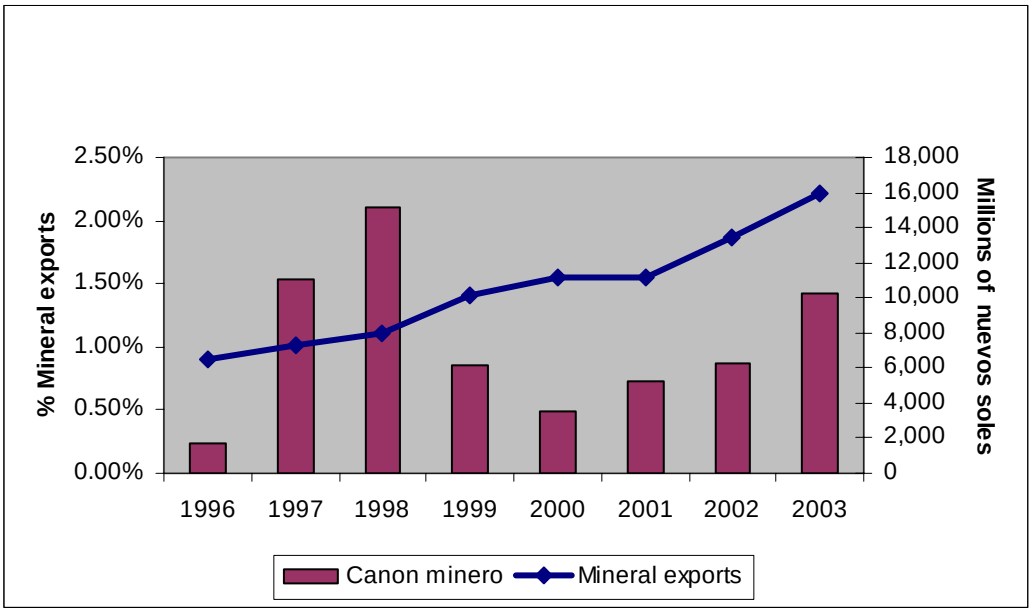
- The territorial area of the Local and Regional Governments in whose district the mining concession is located.
- If the mining companies (metallic and nonmetallic) have mining concessions located in different districts, the distribution is carried out in proportion to the tons of mineral produced, based on information of the Ministry of Energy and Mines.
- In the cases of mining concessions whose extension comprises neighboring districts, the distribution is carried out in equal parts.

The canon distribution between different levels of government is as follows: Ten percent of the total canon collected[140] will be distributed to the local governments of the municipality or district where the natural resource is located. Twenty five percent will be allocated to the local governments of the province or provinces where the resource is located, and the producing districts will be excluded from this allotment. Forty percent will be distributed among the local governments of the department or departments of the corresponding regions, excluding the

[140] The total amount corresponds to the resources generated by the canon in each region or regions in whose districts the mineral resources are being exploited.

regions where the natural resource is located. Finally, the remaining 25 percent will be granted to all regional governments where the exploited mineral resource is located.

Figure 3. Mineral Exports and Mining Canon Distributed to Local Governments



Source: Based on Central Bank of Peru and Economic Transparency – MEF

The last legal modification of the criteria used for the canon distribution was effected in 2003[141]. Likewise, the necessary changes to the previous regulation were decreed in February of 2004[142]. Both norms establish that the resources collected by the canon will be distributed among the regional and local governments according to indexes that are fixed by the Ministry of Economics and Finance[143]. These indexes will be based on population and poverty criteria, which are linked directly to lack of basic necessities and the infrastructure deficit. The new distribution differs from the former in the sense that formerly the main factor was demographic density. Now it is poverty (unsatisfied basic needs).

[141] Law No 28077. Modifies various articles of Canon Law No 27506.
[142] In the previous norm, it was established that 20 percent of the canon would be dedicated to the municipalities of the district or districts where the resource was exploited (population criteria, more benefits to the rural areas); 60 percent to the provincial and district municipalities (population density criteria); and the remaining 20 percent to the regional governments.
[143] The proposed indexes must be approved by Ministerial Resolution.

Table 25. Recent Legal Modifications to Canon

Date	Law	Purpose
July 2001	Ley del Canon (Law Nº 27506)	Share of revenues and profits transferred by the Central Government increased from 20% to 50%.
January 2002	Modificaciones a la Ley del Canon (D.U. -001-2002) [Amendments to the canon law of July 2001]	The revenues and profits to be distributed will be based solely on mining company income taxes. Disbursement calendar of transfers is established by a Decree, considering the timeframe of the collection of the resources that constitute the canon.
June 2002	Ley Complementaria de Legislación del Canon y sobre canon para Petróleo y Gas en Piura y Tumbes (Law Nº 27763) [Supplementary law on the canon and on oil and gas in Piura and Tumbes]	Modifications to the distribution formula for the Gas and Petroleum canon in the departments of Piura and Tumbes.
September 2003	Law that modifies the Canon Law (Law Nº 28077)	Modifications to the distribution formula. Thereafter levels of poverty (unsatisfied basic and infrastructure needs) are considered for the distribution of resources
February 2004	Modifications to Canon Law regulations (D.S. 029-2004-EF)	Modifications in the regulations to reflect the amendments made by law Nº 28077
March 2004	Modifications to the Law that modifies the Canon Law (D.U. 002-2004)	Distribution mechanism in the cases where the standard formula does not permit the total distribution of the resources

As one might expect, the distribution criteria factor is highly controversial, which is why there have been so many legislative changes since its creation. The population and the municipal authorities need not only to grasp the rationale of the criteria used for distribution, but also to receive information in a transparent and friendly manner so that they can understand how their share of the canon resources is calculated. In turn, this could help to generate trust; strengthening community and mining company relationships.

Diagram 7. Mining Canon Distribution Criteria

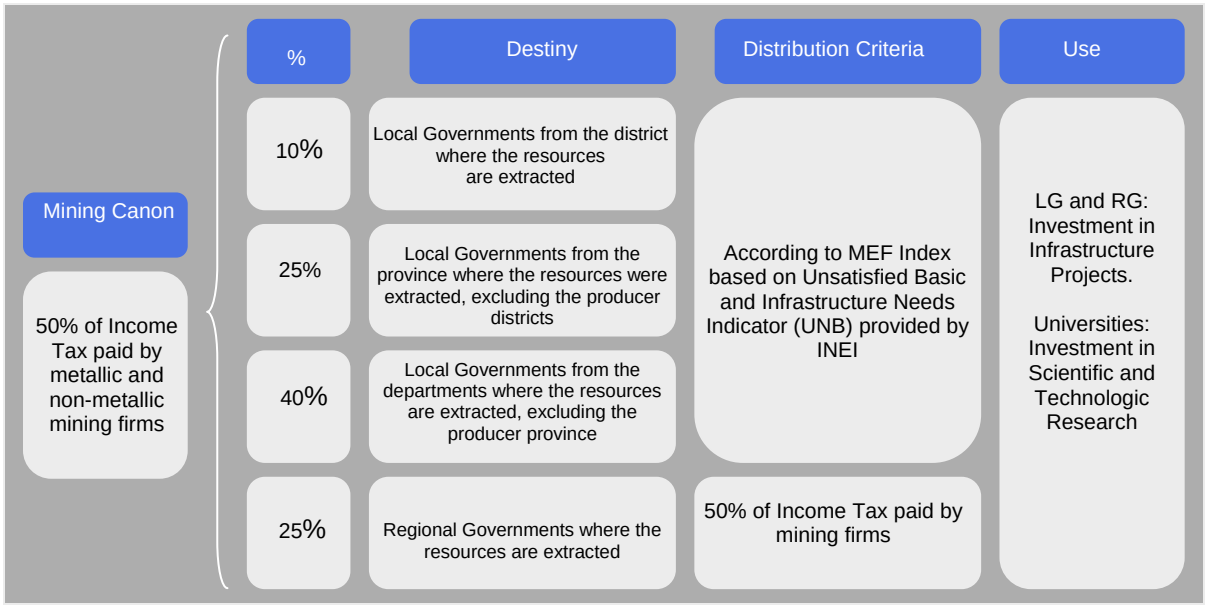


Table 26 shows the share of the canon in local governments' total revenues.[144] (Years 2001 and 2002) As the Table shows, there are municipalities in departments like Cajamarca, Moquegua or Puno, whose canon revenue represents a very high share of their total revenues.

Table 26. Mining Canon Distributed to Local Governments as a Share of Total Revenues (District and Provincial Municipalities by Department)

	2001		2002	
	New Soles	Share of total local revenues	New soles	Share of total local revenues
Amazonas	85,524	0.22%	13,506	0.11%
Ancash	1,759,986	1.43%	15,070,874	19.85%
Apurímac	161,896	0.36%	679,764	3.81%
Arequipa	6,795,945	5.49%	15,839,517	16.27%
Ayacucho	246	0.00%	27,467	0.12%
Cajamarca	26,786,279	18.51%	20,871,995	33.61%
Prov. Const. del Callao	0	0.00%	0	0.00%
Cusco	0	0.23%	237,643	0.34%
Huancavelica	124,519	0.01%	766,068	2.11%
Huánuco	10,179	0.12%	7,250	0.03%
Ica	58,099	2.05%	1,626,628	4.71%
Junín	2,523,907	2.09%	2,064,313	2.93%
La Libertad	2,676,509	0.11%	3,780,675	4.60%
Lambayeque	107,515	0.18%	57,057	0.11%
Lima	2,367,229	0.02%	3,287,167	0.28%
Loreto	36,305	0.00%	1,903	0.00%
Madre de Dios	0	17.82%	4,137	0.07%
Moquegua	7,156,110	14.06%	13,082,682	33.08%
Pasco	5,182,767	0.06%	1,406,168	8.75%
Piura	127,377	0.00%	144,049	0.11%
Puno	14,306,849	10.89%	21,842,060	37.32%
San Martin	35,250	0.06%	49,997	0.20%
Tacna	3,959,381	4.11%	6,859,246	10.86%
Tumbes	377	0.00%	83	0.00%
Ucayali	0	0.00%	0	0.00%

Source: National Decentralization Council (CND)
Own presentation.

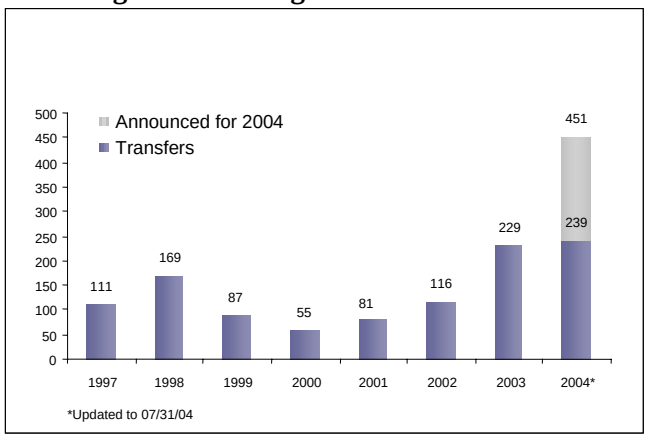
[144] Total revenues comprise: average revenues and central government' transfers.

LIMITATIONS TO THE CANON TAX CALCULATION AND DISTRIBUTION

Calculation

Even if the source of the mining revenue is known, the criteria used to calculate revenue distribution often generate confusion and can cause conflict among the canon beneficiaries since the amount of revenue distributed to regional and local governments varies from year to year. One reason for this variation is that the mining sector income taxes generated in a base year have to wait 18 months to be fully distributed to the local governments. Local governments may not be aware that resources provided by the canon may be based on income tax up to two years prior to the date of disbursement, so they associate the canon transfers that they should receive with current tendencies in the mining sector, like exports or mineral prices and become distrustful concerning the amount of canon revenue they receive.

Figure 4. Mining Canon Transfers



Source: CND

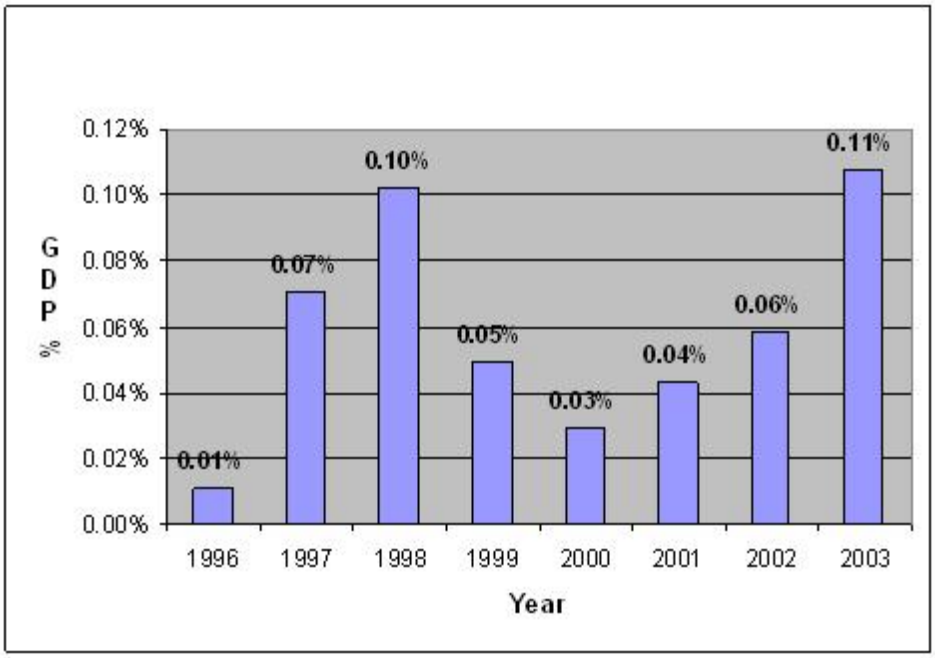
Distribution

Another potentially conflictive situation could arise as a result of the fact that canon transfers are volatile since their calculation is dependent on mining export profits and international economic activity. The volatility of these transfers, due to the fluctuation of international mineral prices, could cause problems if local governments and inhabitants fail to do understand the rationale for the revenue variations each year. For example, although a considerably high mining canon value was achieved in 1998 of almost 170 million nuevos soles, in 2000, the mining canon was just over 55 million nuevos soles because of an international mineral prices crisis[145]. Likewise, as noted earlier, in the 1997-2002 period, the mining canon comprised only 20 percent of the income tax of mining firms. In 2003, this rate changed and became 50 percent. This variant explains why over the past year, resources distributed to the local governments reached a maximum amount of approximately 228 million nuevos soles.

Changes in the mining canon at the local level, as a percentage of GDP, are shown in the following graph.

[145] See Annex Nº 1: Distribution of Canon of the Mining Sector in Peru to Local Governments (nuevos soles)

Figure 5. Mining Canon Distributed to Local Governments



Source: Economic Transparency - Ministry of Economy and Finance (MEF)
(Own presentation)

Despite the positive performance of mineral prices in the past few years, a future increase in mining exports will not necessarily produce a similar increase in the amount of revenue distributed by the canon, since the canon depends exclusively on the net profits that mining firms obtain.

This fact could unleash several problems related to the fiscal sustainability of local governments and, moreover, undermine the transfer system due to a lack of trust among local governments, the population, and the MEF. A possible solution could be to create a stability fund, which could help local governments to save resources during profitable years and provide accumulated funds during the unprofitable years, reducing the volatility of the canon transfers. However, it will have to follow strict disclosure practices since it could also be a new source of conflicts between different levels of government and could be opposed since local governments may feel it undermines their autonomy to use canon resources as they see fit.

Regarding the rationale of the distribution criteria, the recent changes to the distribution formula try to favor the low-income population through the introduction of a new variable – unsatisfied basic and infrastructure needs, but this has caused problems. The new criteria favor 858 municipalities, reducing the resources of 321 localities, and it was supposed to become effective as of June 2004. However, the municipalities that suffered a cut in their funds are protesting because these resources were already included in their budgets for the current year and therefore are already allocated to ongoing investment projects. As a result, the Congress and the Ministry of Economy and Finance have proposed delaying the application of the new formula.

The new distribution based on poverty helps correct the biases of the original formula. However, as the Minister of Finance has stated, it makes share estimation more complex. If, as we mentioned earlier, the unsatisfied basic and infrastructure needs indicator overcomes the inequality drawback of the demographic density criterion, the canon distribution still suffers from

excessive dispersion: too few resources need to be shared with too many municipalities (1516 out of 1829). This problem is related to the excessive number of municipalities in Peru.

MINING ROYALTIES

The tax regime has recently been modified by the introduction of mining royalties. A mining royalty is the economic consideration that a concessionaire pays to the government for the exploitation of mineral resources (metallic and non-metallic).

This contribution is commonly levied in Latin American countries and, generally, its reference base is company sales. However, until recently, Peru did not consider using royalties.

The Peruvian Congress passed a royalties act[146] in June of 2004 that contains the following specifications:

- The mining royalty would be paid on the value of the concentrate or its equivalent, at international market prices.
- The taxable rate would be determined according to the following ranges:

Up to 60 million dollars annually	1%
Between 60 and 120 million dollars annually	2%
More than 120 million dollars annually	3%

In all applicable cases, the Ministry of Energy and Mines would publish the international market prices on a monthly basis.

- The act also indicates that the Ministry of Economy and Finance will be responsible for collection and administration of the royalties and for establishing the form and conditions of payment.
- The amount paid for royalties would be considered as costs in the corresponding fiscal year, and therefore, deductible from taxes.
- Finally, the law offers specifications for the distribution and use of the revenue collected, which will be explained in detail in the following section.

DISTRIBUTION OF ROYALTIES

Unlike the mining canon, royalties represent an additional contribution that investors in the mining sector will have to give to the Peruvian government. However, a share of the mining royalty would also be distributed among subnational governments, and in this sense, it is redistributive, like the canon (95 percent to subnational governments, 5 percent to national universities). The proposed royalty distribution is outlined in the following Table:

[146] On June 3rd, 2004 the law proposal that sustained it was approved in Plenary Session of the Congress of the Republic for the very first time.

Table 27. Mining Royalties Distribution Criteria

%	Beneficiaries	
20%	District municipalities where natural resources are located.	Local Level
20%	Provincial municipalities where natural resources are located.	Local Level
40%	Provincial and district municipalities of the department(s) where natural resources are located.	Local Level
15%	Regional Governments where exploitation of the natural resource takes place	Regional Level
5%	National Universities of the departments where the natural resource is located.	Institution

Carlos Casas (2004)

The revenues obtained in the form of royalties are directly related to a company's sales. By contrast, the alternative resource redistribution mechanism-- the canon – reflects company profits, because it is a share of income tax. Thus, royalties, if the legislation is passed, would offer a more stable source of revenue for the towns affected by mining activities than the canon.

LIMITATIONS TO THE ROYALTY TAX CALCULATION AND DISTRIBUTION SCHEME

Calculation

There is concern regarding the complexity of the royalty tax, as well as the bias it generates among the different sectors. Recently, there was a discussion regarding the reference value used to calculate this payment. The intended value was the value of sales. However, the National Government (June 2004) introduced consideration of ranges of international prices, arguing that it is more efficient, equitable and neutral than the previous consideration. Thus, the proposed royalty tax may create a new set of challenges in the calculation of this new tax.

Distribution

Given the track record and performance of the canon distribution, it is likely that there will also be difficulties in administering the distribution of the royalties tax in a transparent and efficient manner that benefits the intended communities.

However, it is important to mention that the royalty system is less complex than the canon. Its calculation and distribution are more understandable but it introduces a distortion in the tax system because it taxes mining firms' sales revenue independently of the profits generated. In this sense it is opposed by some stakeholders because they believe it could affect the competitiveness of the Peruvian mining sector and reduce investment in the sector.

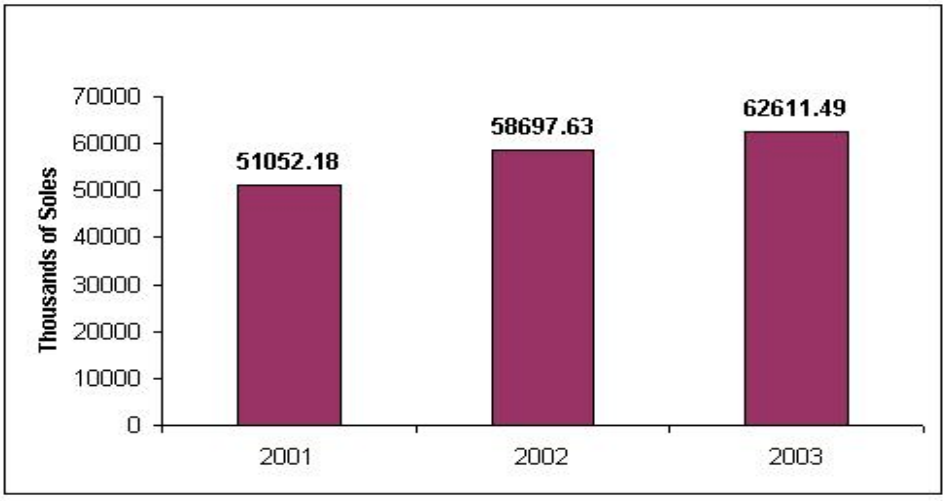
Some companies may consider cutting or reducing their investments in infrastructure for local communities (such as paving, electrification etc.) since the royalty (which, like the canon, could provide an opportunity for local communities to develop their own local infrastructure) represents an additional tax burden and could therefore make their overall operations less profitable.

Recently, however, some political leaders have proposed dropping the mining royalties act because royalties affect the competitiveness of the Peruvian mining sector. While, the government itself is currently drafting enabling regulations, some sectors within it still want to modify the recently approved law.

CONCESSION RIGHTS (DERECHOS DE VIGENCIA)

Every year, mining enterprises pay the State a concession fee per hectare for the right to use, explore and exploit the geographic zone in which they decide to carry on their activities. According to the Mining Law, firms are required to pay this fee on an annual basis from the moment a concession is granted (if 2 years go by without payment of this fee, the concession will be revoked). The following graph tracks changes in the revenues from this source.

Figure 6. Land Use Fees



Source: Ministry of Energy and Mines / INACC

The share of revenues from concession rights (*derechos de vigencia)* in the total revenue of provincial and district municipalities is significant in some departments and provinces. In 2002, for example, income from this source accounted for 14% of the total revenue of municipalities in the department of Madre de Dios.

DISTRIBUTION OF CONCESSION RIGHTS (DERECHOS DE VIGENCIA)

A share of the revenues from concession rights must also be redistributed, according to current laws, to the local governments where the mining concessions are located, as shown in the following Table:

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Table 28. Concession Fee Distribution Criteria

%	Beneficiary	
40%	Local Governments where the concession is located	Local Level
35%	District Municipalities of the department(s) where the concession is located and whose populations qualify as living in extreme poverty[147].	Local Level
5%	Ministry of Energy and Mines for maintenance and development of the mining-metallurgical information system	Central Level
10%	INGEMMET (Mining and Metallurgical Geological Institute)	Institution
10%	Maintenance and development of the Mining Public Registry (*Instituto Nacional de Conseciones y Catastro Minero* - INAAC) for concessions, official registration, and *Derechos de Vigencia* distribution	Institution

Own presentation

Unlike the canon revenue, there are no particular expenditure conditions attached to transfers to local governments of a share of concession fees. However, at the institutional level, the use of these resources is clearly specified for two of the benefiting organisms (INGEMMET and the INAAC), which are to use these funds for system maintenance and development.

USE OF MINING PROCEEDS

Currently, canon usage stipulations state that revenue must be oriented towards new infrastructure projects. Thus, the law would have to be modified if local governments wanted to use these funds for existing infrastructure maintenance, human capital training or environmental rehabilitation projects. Likewise, in order to ensure the quality of the public investment carried out, the canon law also insists that National System of Public Investment (SNIP) regulations must be followed to identify, formulate, evaluate and execute the projects.

Recent laws (issued in 2003-2004), spell out how these resources are to be used. They emphasize that investment should correspond exclusively to projects or infrastructure works of regional and local impact. They also specify that regional governments will give 20 percent of the total amount received from the canon to the public universities in their district[148], and that these

[147] This assessment is made pursuant to the Regulations governing the General Mining Law.
[148] When a region benefited by the canon has more than one state university, the respective regional government should transfer the corresponding resources in equal parts.

resources will only be spent on scientific and technological research that can harness regional development.

Despite the legal conditions, not all canon resources are used exclusively for capital expenditure. Since the departments that receive the mining canon are among the poorest, where the infrastructure deficit is elevated, resources are normally dedicated to works of physical infrastructure. Consequently, the canon revenue is seldom used in repairs related to social or environmental impacts of mining activities. This lack of specification concerning expenditure conditions and the failure of local governments to use part of the revenue to address mining impacts creates a false perception for the residents of the towns affected by mining activities, since they do not always perceive a direct benefit from the canon revenue in the short-term, but they do see the negative environmental effects of the mining activities immediately.

The legal norm, with regard to the transparency of project expenses, establishes that works executed with canon funds must indicate the origin of the project funds through signs put up by each Local or Regional Government. However, there is a clear need for capacity building at the local level to enable local governments to develop and implement investment projects in a transparent and effective manner.

Legal transparency norms are often not followed strictly by local governments, which have neither the technical skills nor funds to abide by them. This exacerbates the perception of poor and opaque fiscal performance. In this sense, using the Integrated Financial Administration System (SIAF) would provide a more complete information system for expenditures at the municipal level and improve fiscal resource accountability within Peru. However, this system does not provide information regarding the utilization of distributed canon resources. Although SIAF provides access to databases for publicly funded projects at the national and regional levels, it only provides aggregate figures for the canon and *Sobrecanon*[149]. Moreover, at the local level there is even less available information since the SIAF has yet to reach that level.

One of the biggest problems that local authorities and enterprises face in connection with mining is the lack of capacity and of communication mechanisms to ensure transparency in the use of mining revenue. Only through the development of these tools can information and requirements be diffused, enhancing trust among stakeholders and enabling the population and the local governments to reach common objectives.

ROYALTIES

The mining royalties act is very specific as to the use of receipts. In general, it establishes that all resources earmarked for regional governments and municipalities must be used exclusively for financing or co-financing productive investment projects, so that the mining sector contributes to the economic development of each region.

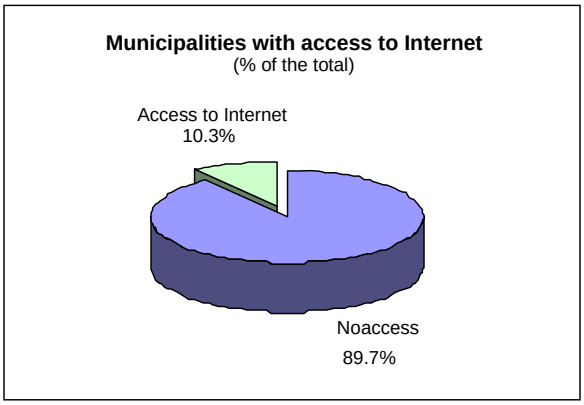
Also, and more specifically, it indicates that 50 percent of the resources distributed among the district municipalities in which natural resources are exploited (20 percent of the total royalties), must be invested in the communities where the deposit is being exploited. It also specifies that the resources allocated to the national universities should be used exclusively for investments in scientific and technological investigation. Therefore, the royalty proposal is more directly geared to distribution needs.

[149] The Sobrecanon is a reallocation of resources from oil canon in certain oil-producing departments. The reallocation is between Tumbes and Piura and Loreto and Ucayali.

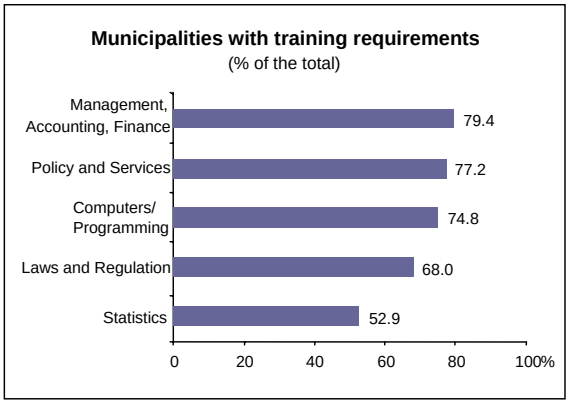
IMPLEMENTATION CAPACITY AT SUBNATIONAL LEVEL

As mentioned above, lack of capacity and resources may often be the reason why the government, the private sector and civil society do not comply with their duty to provide information freely to the public. Answering inquiries from consultants, students, and interested stakeholders requires having systematized information and staff members who have the knowledge and the time to be able to orient the inquiring party, organize the data in an efficient database, or post the information to a web page.

Figure 7. Municipal Capacity Indicators



Source: INEI-OTED-RENAMU 2001-2002.



Source: INEI-OTED-RENAMU 2001-2002.

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Public Expenditure Tracking Surveys (PETS) developed for the Public Expenditure Review (World Bank 2002) show that about 6 of the 10 municipalities outside Lima that claimed that they knew how their transfers were calculated actually did not understand how the transfer system worked. In the poor municipalities, the number that understood the distributive mechanism used for canon resources was as low as 3 out of 10 municipalities.[150] Even within MEM there are few high level staff who understand the criteria and methodology used for resource transfers to the regions and municipalities[151]. As mentioned above, poor comprehension about the calculation and destination of mining resources, such as the canon, can cause distrust at the local level since the amount of these revenues vary from year to year due to fluctuations in international mineral prices.

In this respect, there is a lack of capacity of the different groups involved at the subnational level. The first group consists of local authorities. The mayors and local legislators (*regidores*) have political objectives that do not always match the needs of the population. The lack of transparency in the use of resources and the population's scant knowledge of the revenue source create conflicts between the population and the authorities. In addition, there is corruption in some places, which magnifies the conflicts. Lastly, there is a dearth of capacity in some local governments to meet requirements, such as those of national administrative systems like the National System of Public Investment (SNIP). This process can be cumbersome, containing various phases and requiring several studies and bureaucratic procedures. Many local

[151] Interview with MEM staff (2004).

governments do not have the capacity to meet these requirements (in addition to a weak grasp of the accounting, financial management, and procurement skills needed to carry out adequate supervision of the utilization of funds, according to SNIP regulations). Thus, transparency and accountability are key issues that need to be considered in developing these skills.

The second group involves the regional authorities. At these levels a great amount of heterogeneity is observed. In the poorest areas (where the mining firms are generally located), the level of capacity is very low and there is a need to launch a general capacity-building program in which officials will be trained in administrative and participatory issues. They must be accountable to citizens for providing services and quality goods. If they are not, conflicts will arise and create a bad governance climate, as we have seen in some municipalities in recent months.

The last group involved is the population. The participation of this group in local decisions is still incipient. The current legislation related to the decentralization process has created new organizations such as the Local Coordination Council and Regional Coordination Council for the purpose of discussing the plan for the jurisdiction and the participatory budget. If the population wants to participate, it must do so through a social organization, such as producers committees and NGOs, and in several regions or municipalities strong grassroots organizations do not exist.

This lack of capacity in the three aforementioned groups results in expenditures that are inefficient and do not match the needs of population. The short-term development mentality of many mayors often results in poor quality projects that do not address important issues, such as actions designed to mitigate environmental, health, and education deficiencies. In addition, the population does not have a clear vision of the problems in their jurisdictions. Given the high incidence of poverty in their localities, the local inhabitants value projects in physical infrastructure like roads, or less beneficial physical infrastructure not related to productive or social infrastructure, like bull rings, public squares, monuments and stadiums. They are often not aware of the significant risks posed by environmental problems and thus prioritize other projects. So, although it is a huge task, it is important to design a capacity-building and awareness-raising program about such key issues at the local level.

The national government should organize and conduct an awareness campaign through actions designed to inform all actors involved in local decisions about the dangers of not addressing environmental problems and the impact on the sustainability of their jurisdictions. There is a need to show best practices in other countries or other Peruvian jurisdictions regarding ways to channel resources toward resolution of environmental issues. The citizens must understand the dangers that environmental legacies pose for their living conditions, such as their health, and the negative impact on productive activities such as agriculture and livestock. The public budgets of these regional and local governments usually contain a long list of projects to be funded and the proceeds of the Canon and FONCOMUN are too meager to finance all the projects they want. Thus local governments need to be trained to estimate the costs and benefits of carrying out projects, especially those related to environmental issues.

For these reasons, a key challenge is promoting the use of these resources to address environmental and social issues derived from the impact of mining activities on local communities (while still addressing other priority issues). Clearly, these issues often compete with the interests of local political appointees, who may prefer to spend limited resources on works that would allow them to gain short-term political support.

ECONOMIC INSTRUMENTS TO IMPROVE ENVIRONMENTAL PERFORMANCE IN THE MINING SECTOR

Mining activities generate a series of externalities to the economy[152]. They can, in particular, create environmental and social externalities or costs that are not internalized by these companies (as explained in Chapter 2, the total estimated cost of remediation of legacies amounts to US$200 million). In addition to clean-up costs, pollution from either mining environmental legacies or ongoing pollution generates a series of impacts on society in terms of health costs, loss of productivity, degradation of land, agriculture and fish-stock, and damages to infrastructure. As shown in Chapter 4, mining has also generated a number of social conflicts and costs. However, no serious analysis has yet been undertaken in Peru to determine the aforementioned costs that have accrued from pollution and environmental degradation and from resulting social conflicts.[153]

In the Peruvian case we can see command and control measures to manage environmental issues. In this aspect governmental institutions set the standards of contamination and carry out control actions to check whether firms are abiding by the regulations. If firms do not follow the regulations, the national agencies impose sanctions and fines. However, the criteria for the effectiveness of these sanctions are not clear, considering that a significant percentage of charges have been declared unfounded by the Mining Council without a convincing justification, according to the petitioners (as we saw in Chapter 3 on environmental governance). Consequently, there is a need for capacity building at the local level to identify and formulate projects and enforce the regulations that control environmental problems.

Currently the Peruvian tax system does not include any specific taxes to resolve environmental and social issues, nor methods to compensate communities affected by mining activities. As mentioned above, the mining canon distributed to municipalities and regions requires that funds be used for the development of infrastructure. Modifications would have to be made to provide local authorities the option to use part of this income to mitigate environmental and social issues generated by mining activities. Furthermore, an active awareness campaign about the seriousness of environmental damages would also need to be carried out in mining regions and municipalities to encourage these areas to make environmental rehabilitation a priority. However, Peru currently lacks economic incentive mechanisms which could encourage communities to use some of the revenue they receive from mining proceeds, even if it is only a small percentage, to implement environmental projects.

Therefore, the GOP should both promote and facilitate these environmental rehabilitation projects by making a commitment to co-finance these projects or provide subsidies to regional and local governments that decide to implement environmental rehabilitation projects with a portion of their own canon and royalty proceeds.

There is also a real need to perform a detailed census of all environmental problems and legacies in order to obtain a more accurate estimate of the cost of remediation and prevention of environmental problems. Armed with this information, it will be quite easy to design market and command and control mechanisms that can be enforced. The information can also be used to promote awareness of environmental priorities at the national, regional and local levels.

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[152] Externalities are those costs or benefits arising from a transaction that are not fully reflected in the monetary amount of the transaction.

[153] E.g., costs to tourism, local commerce, agriculture etc. associated with the blocking of roads in Cajamarca by the community, and from a general strike promoted by the municipality and the region as a result of Minera Yanacocha's exploration of Cerro Quilish.

Market-based instruments (MBIs) are defined as "instruments or regulations that encourage behavior through market signals rather than through explicit directives" (Stavins 2000)[154]. They can be used to achieve environmental protection goals in a more efficient manner than traditional command-and-control regulatory instruments, since they give incentives to reduce pollution to below standard target levels. Currently, it is both complicated and expensive to identify individual mining company noncompliance with EIAs and PAMA and it is very difficult to enforce environmental standards in Peru. However, the advantage of economic instruments is that they require fewer individual permits, monitoring and enforcement personnel. They may provide either economic incentives or disincentives to encourage better environmental performance or to discourage undesired activities or impacts. Economic instruments are generally based on levying fees or taxes on certain operations or products that have high environmental impacts.

The GOP is now requiring in the mine closure law, as governments have done in Australia and Bolivia, a security deposit for the cost of mine closure and the amount of the financial guarantee required each year would be lowered if the company meets its environmental management responsibilities. Another possible way to stimulate environmental compliance is to allow the reduction in the amount of the guarantee for good environmental performance to be used as a tax credit against the mining company's income tax bill. Furthermore, these financial guarantees will commit mining companies to properly closing mining operations since the mine closure funds will not be completely released until the mine closure has been successfully completed and verified through an environmental audit. The Mine Closure law calling for implementation of the financial guarantees strategy was published in Peru in 2004. However, the regulation has yet to be passed.

Another possibility is to take advantage of the new royalty act as a tool to provide market incentives for good environmental behavior. The GOP could stipulate that mining firms with good environmental performance results will obtain a reduction in their required royalties payments. The MEM will have to verify if the firms are fulfilling the environmental standards that they agree to in their EIAs and will also have to establish a scale of reduction in royalties according to environmental performance. Obviously this may imply that resources to regional and local governments may be diminished, but the national government could justify this reduction to local governments and the population by arguing that sound environmental practices reduce the serious health and (especially farm) production hazards associated with the negative environmental impacts of noncompliance with environmental regulations. The idea can be sold to the mining sector by stressing that if mining companies in Peru meet environmental standards they will receive tax credits or a royalties tax break, which will reduce company costs and improve competitiveness with the neighboring Latin American countries that Peru is competing with for mining investments.

Given the current tax burden of the mining sector in Peru, a good instrument to motivate mining firms to fulfill their environmental standards is to use expenditure on environmental works, once the MEM certifies them, as a tax credit against income tax. This scheme currently does not cover for MELs in Peru.

Regulators in the United States and Canada have also used a strategy of releasing information to investors and consumers about a firm's environmental performance and comparing firm performance (e.g., the Toxics Release Inventory in the United States) in order to increase

[154] Whitten, Stuart, Martin van Bueren and Drew Collins. "An Overview of Market-Based Instruments and Environmental Policy in Australia". 2003.

incentives for pollution control, since this type of information can effect investor and consumer decisions about the capital market (particularly the stock market price of the company)[155]. However, the success of this type of polluter list strategy depends on its ability to influence investor and consumer decisions. Nonetheless, as international experience shows, market-based incentives can serve as an effective and cost effective means of controlling environmental performance, which would be especially helpful in the Peruvian context due to the lack of effective monitoring activities, weak enforcement of environmental regulations, and limited funds for monitoring mining activities.

INVESTMENTS BY MINING COMPANIES IN LOCAL COMMUNITIES

Not all the investment received by communities comes through local governments and transfers. International mines tend to invest more in communities than do national entities, and they now make a greater effort to achieve the sustainable development of the community than they did in the past. This may be the result of having greater resources, better capacity for community relations and local development, and of being more carefully scrutinized by public interest groups in the international community.

In relation to the social support that the companies give to the communities, there are no established criteria that define the limits of corporate social responsibility for services, installations, and infrastructure, schools, highways, medical buildings, etc. This lack of definition of the roles of the parties in the sector causes confusion and a lack of confidence in being open about investments and results.

Mining companies publish the amounts allocated to these activities in institutional publications (like their yearbooks) made available to their stakeholders. However, the population is rarely the target of this type of communication strategy. Therefore, mines should not be content just to invest, on a voluntary basis, in social services in the localities where the mines are situated, but they should also be concerned with efficiently communicating this information to the community.

DISCLOSURE AND DISSEMINATION OF INFORMATION

The first three sections of this Chapter presented the sources, distribution and use of the mining proceeds. As we have seen, the problem is not, in itself, lack of transparency. It is true that some reforms could result in heightened transparency; like the simplification of the distribution formula and the strengthening of the capacity and training of local governments. However, it is important to recognize that the system is well developed in terms of transparency at the national level. Many of the mining enterprises are public firms that are under permanent supervision by the stock market regulators, auditors and their own stakeholders, while the Government, regardless of whether the system is fair or adequate, at least publishes the distribution formula and criteria used to calculate shares.

The problem is that the beneficiaries cannot access this information in a timely and easily understandable manner. In this context, additional disclosure mechanisms and an efficient communication and information dissemination strategy are required to overcome these problems and shore up trust between the main stakeholders. Likewise, environmental and safety data and reports from the mining companies are not properly released to the public, which further erodes public trust in mining activities.

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[155] Lanoie, Paul, Benoit Laplante, and Maite Roy, 1997. “Can Capital Markets Create Incentives for Pollution Control?”

There are a number of programs and activities to promote the adoption of certain principles that could enhance transparency and trust in the system. Among the more recent and innovative approaches are the Extractive Industries Transparency Initiative and the Global Reporting Initiative. While the former sets forth a series of principles and recommendations exclusively aimed at promoting clarity in fiscal management of the mining and energy sectors, the latter focuses on guidelines for voluntary information sharing at a global level regarding the sustainability of any given industry. The adoption of both these initiatives could potentially reduce the mistrust and conflicts that originate from a lack of fiscal transparency. However, these initiatives will have to be adapted to fit actual needs and training programs may be needed to teach local governments how to implement measures for improving fiscal transparency..

MEASURES TO PROMOTE TRANSPARENCY

Between 1993 and 1998, the World Bank Group implemented the Energy and Mining Technical Assistance Loan (EMTAL) to finance projects aimed at assisting the Peruvian GOP in the institutional development of the MEM and its related entities to ensure their adequate contribution to economic stabilization and structural reform in the energy and mining sector. The EMTAL project, among other things, created the basis for increased transparency in the Peruvian mining sector. EMTAL supported the creation of a modern mining cadastre, resolved pending requests for mineral rights and established clear property rights, which led to greater investment. In addition, mining sector statistics and annual indicative plans for each sector were improved and circulated, which also increased transparency. Lastly, communications and public relations efforts in regards to environmental issues were enhanced through the disseminating and publishing of environmental protection guidelines and other technical information. All of these projects greatly increased the transparency, credibility, and stability of the MEM and improved relations between the different stakeholders involved with or affected by mining activities[156].

Another important reform was the Law on Transparency and Access to Public Information (Law # 27806) in July 2002, aimed at promoting transparency in the actions of the state and regulating the fundamental right of all citizens to have access to information, as stipulated in Article 2.5 of the Political Constitution of Peru. According to this law, all activities and provisions of the entities discussed in the law are required to adhere to the principle of providing public information and to meet the following requirements:

- All information that the state possesses is presumed to be public, except for that which is described in Article 15 of the law, referred to as national security or information that could affect the interests of the country;
- The state is obliged to adopt measures that guarantee and promote the transparency of the actions of public administration entities; and
- The state is obliged to accede to demands for information.

The General Directorate of Mining (DGM) of the MEM is required continue posting in a transparent manner all (unclassified) information regarding the mining sector on its website and to continue publishing all mining-related laws and public policy issues in the official gazette, *El Peruano*.

[156] "Project Summary Sheet-Extractive Industry Review: Peru" Energy/Mining T.A. (P008059). World Bank.

However, the transparency law will not be effective at the local level until January 2005. Currently a large number of municipalities and regional governments do not comply with the regulations to be enacted. According to a survey made by *Ciudadanos al Día,* an NGO working to improve public policy in Peru, 53 percent of Metropolitan Lima and Callao municipalities comply with the Transparency Law and 67 percent had an Internet portal. Nevertheless, the enactment of Law #27806 has greatly improved transparency in the Peruvian mining sector and its impact will be magnified when local governments enter the system.

Regarding transparency and capacity-building issues, the GOP has embarked on a State Modernization program, accompanying the decentralization process. With international cooperation support, the GOP is expanding and reforming a set of instruments and systems that will have a great impact on local government management and transparency.

The first, and most notable, of these instruments is the SIAF (Integrated Financial Management System). Peru has developed a high-performing integrated financial management system. SIAF already covers all national government and most decentralized entities, and was institutionalized through the recently approved Public Sector Financial Management Law, which formally integrated it into the organizational structure of the MEF. In terms of technical expertise and effective use of integrated financial management at regional and local government levels, Peru is probably one of the most advanced countries in the region.

The SIAF ensures uniform accounting, budgeting and reporting standards, and on-line monitoring of contracts and disbursements. The SIAF is also a key ingredient for transparency in expenditure; governmental and citizens' monitoring and evaluation of regional and local public finances; and participatory budgeting and execution of investment programs. Currently, SIAF is being expanded to local governments and information on the budget execution of 600 municipalities has just been released and published on the MEF's web page. When the process is fully completed, information regarding the uses of mining proceeds will be available to the public, facilitating the supervision of local governments' compliance with legislation.

Another key instrument is the National System of Public Investment (SNIP), which establishes requirements for public investment projects to ensure quality standards and a minimum profit rate. The system has been criticized because of the burdens it imposes on local governments, which are used to investing public funds without adequately evaluating the projects beforehand. However, the Ministry of Economy and Finance (MEF), through the Institutional Capacity for Sustainable Fiscal Decentralization Technical Assistance Loan, a World Bank Group project, is implementing a training program to improve the capacity of local governments to generate quality investment projects. The most recent SNIP modifications for municipalities give them greater autonomy, but demand that there is a formulation unit and an Investment Programming Office (OIP), which require today's mostly financially strapped municipalities to designate important resources for these ends. Thus, the municipalities need training to develop quality projects and financial strengthening policies to increase their own resources. This will also increase the resources available for solving environmental problems.

Other reforms include: (1) strengthening of the monitoring and evaluation system, through results-based management agreements; (2) the reinforcement of the Participatory Budgeting System, that permits the allocation of resources according to population preferences, engaging and interesting the population in public finances, enhancing public surveillance mechanisms; (3) multiyear management and planning training for subnational governments; and (4) strengthening capacity to manage real estate assets, thereby reducing the losses and under-use of public infrastructure.

The data currently available on the Government's "Portal de Transparencia Económica" (on-line economic transparency portal) are another significant step toward disclosure of monthly revenue transfers to municipalities from the sector. However, this information does not include qualitative data about investments or the criteria used for their specific distribution. In addition, in a country in which most of the affected communities do not have access to the Internet, other means of conveying information need to be devised.

While the MEM, MEF and other government agencies are gradually taking some steps to ensure that data pertaining to the sector are easily accessible and updated, clearly more needs to be done so that all interested parties (including local communities) can have access to the information. Given that lack of trust has been identified as a key element contributing to tensions among stakeholders, the disclosure of financial and other relevant data is an important step toward improving current conditions. Thus, it is to be expected that NGOs, civil society and mining companies adhere to high information disclosure standards (e.g. by reporting sources of financing, expenditures in the community, etc.). Developing mechanisms by which communities and the public in general have access to key financial data from government, mining companies, and NGOs can be considered as one crucial step for promoting synergies among key stakeholders.

This call for transparency in the sector also applies to NGOs and civil society. These groups rarely report the sources of their financing. NGOs and civil society organizations should be held to the same transparency standards as the government and the private sector. This will also help communities to be adequately informed and make good decisions concerning their own welfare.

Environmental NGOs must also provide transparent and honest access to their finances. It is currently not clear, for instance, how many NGOs that oppose mining operations are financed by external sources, and if there are alliances with communities for political gain. Thus, ensuring transparency would help NGOs gain trust with communities and the private sector. It would also allow them to carry out their critical tasks of regulating and monitoring industry and government when the latter are not able to adequately accomplish these functions. Governments and mining companies often assume that the data presented by many Peruvian NGOs are unsubstantiated and attempt to discredit these NGOs when there is not sufficient transparency. However, these organizations play an important role, and can often close gaps that the competent authority is unable to fulfill. NGOs provide environmental control, regulation and monitoring of mining operations. In some cases these groups even replace the state authority with more efficiency and achieve more credibility in the eyes of the local population. Nevertheless, NGOs and civil society organizations have been criticized for making irresponsible claims against companies or government. Thus, just as the private sector should be encouraged to use mechanisms such as codes of conduct to establish and encourage industry standards, civil society should take actions to ensure the legitimacy of claims: through speaking out, establishing codes of conduct, and being as transparent as possible.

THE EXTRACTIVE INDUSTRIES REVIEW (EIR) TRANSPARENCY GUIDELINES[157]

The WBG management response to the EIR states that the transparency of revenue payment by extractive industries (EI) to governments is an important step toward the greater accountability and informed debate that are essential for better governance. In addition to ensuring that revenue inflows are transparently accounted for and disclosed, it is also critical to ensure that they are

[157] Lanoie, Paul, Benoit Laplante, and Maite Roy, 1997. "Can Capital Markets Create Incentives for Pollution Control?"

appropriately used. Thus the improvement of the quality of public expenditure processes and programs and a greater and more specific focus on transparency of EI revenues is essential.

Following is a summary of the pro-governance prerequisites listed in the WBG management response to the EIR :

- Promote transparency in revenue flows,
- Promote disclosure of project documents,
- Develop the capacity to manage revenues responsibly,
- Help governments develop modern policy & regulatory frameworks, and
- Integrate the public in decision-making processes at local & national levels.

Support and potential implementation of the Extractive Industries Transparency Initiative (EITI)[158] launched by the Government of the United Kingdom last year to promote EI revenue transparency and the objectives of campaigns such as "Publish What You Pay" and the Global Reporting Initiative (GRI)[159], a long-term, multi-stakeholder, international process aimed at the development and dissemination of globally applicable *Sustainability Reporting Guidelines*[160], is another possible way to improve the transparency of the mining sector in Peru. In addition, the WBG can provide training and help with the development of EI revenue accounting skills and assist in the publishing of information of EI revenues in a consistent and useful way. According to the WBG, a voluntary approach to transparency that emphasizes country initiative and ownership will be more effective than imposition of conditionality by donors.

Making revenue transparency a requirement for loans for new investments in the EI sector and requiring transparency about project payments to governments and public access to relevant terms of key agreements of public concern, are further suggestions for enhancing credibility and trust between stakeholders in the mining sector. However, as mentioned above, there already are significant levels of transparency in Peru at the national level since the calculation of mining revenue taxes and the transfer of these taxes to the GOP is public information and posted on the MEF and MEM websites. Consequently, the EITI should be adapted to meet Peruvian fiscal transparency needs, primarily ensuring transparency in the transfer of mining revenues to local governments and the proper use of those revenues by those governments. Implementing this Peru-specific EITI initiative in conjunction with the extension of mechanisms like the SIAF and SNIP could greatly improve the transparency of fiscal revenue distribution and use at the local level.

[158] See Appendix 14 for more details.
[159] See Appendix 15 for more details.
[160] "Global Reporting Initiative" An abridged version of the 2002 Sustainability Reporting Guidelines, Integrated with the draft Mining and Metals Sector Supplement. June 4, 2004.

Box 12 The Kyrgyz Republic and Extractive Industries Transparency Initiative

The Kumtor Mine in the Kyrgyz Republic is the largest industrial operation in the country, employing 1,650 people, and accounting for 10 percent of GDP and 40 percent of exports[161]. During a mission trip to the Kyrgyz Republic, the World Bank Group (WBG) recommended that the Kyrgyz Republic improve transparency by i) endorsing and implementing the Extractive Industries Transparency Initiative (EITI); ii) performing a "risk assessment"; iii) restructuring the public regulation organizations for the mining sector and designing a single regulatory body; and iv) conducting a study of state mining assets to aid in the privatization process.

In order to increase transparency, the Kyrgyz government issued a resolution endorsing the EITI in May 2004; adopted an action plan for reporting and restructuring Kumtor mining revenues; and plans to finish conducting an audit of Kyrgyzaltin by September of 2004. In the long term, the Kyrgyz Republic plans to further improve transparency by establishing a Committee for EITI Implementation and a board for providing advisory assistance for the EITI committee; designating the Ministry of Economy and Finance, the Department of Fuel and Energy of the Mining Sector, and the Prime Minister's Office of the Kyrgyz Republic responsible for EITI coordination; and making the Department of Fuel and Energy and the mining sector unit of the Prime Minister's Office responsible for regulating the EITI implementation process.[162]

Some of the key lessons learned from the EITI implementation process are the following:

- The need for commitment on the part of high-ranking government actors/organizations
- The need for a coalition of stakeholders
- The need for clear goals and rules/regulations
- EITI implementation can increase transparency
- The need for technical assistance funds
- The high cost of international expertise can slow implementation

Nonetheless, the Kyrgyz Republic serves as an example of how a developing country can implement the EITI to improve transparency in the mining sector with the help of all stakeholders. However, there is much less transparency in the mining sector of the Kyrzgyz Republic than in Peru. Therefore, Peru will need to adapt the EITI to its own transparency needs, specifically to improve transparency in revenue distribution and use at the local level, which will require the cooperation and commitment of all stakeholders, as seen in the Kyrgyz Republic experience.

Through the MEM, the GOP has recently demonstrated its interest in adopting the EITI principles and beginning the development of a more transparent and efficient framework for the mining and energy sectors, with the assistance of Department for International Development (DFID) and the World Bank. During an EITI seminar held in Peru in October by the DFID and World Bank, renewed interest was shown for the EITI. However, the GOP and mining companies pointed out the existing high levels of transparency concerning mining revenues and income tax transfers to the government, especially compared to countries like the Kyrgyz Republic. Civil society did not contend this point, but instead pointed to the need for conveying this information in a more easily understandable manner and finding ways to disseminate this information at the local level, where access to the Internet seldom exists. (See Appendix 5 for more details).

[161] Andrews, Craig and Michael Levistsky, 2003. "Extractive Industries Transparency Initiative: The Case of the Kyrgyz Republic".
[162] Bishkek, "On Measures for Mining Sector Activity Transparency Improvement". Resolution-Government of the Kyrgyz Republic. May 2004. No. 361

THE GLOBAL REPORTING INITIATIVE (GRI)[163]

The Global Reporting Initiative (GRI) is another long-term, multi-stakeholder international process geared to developing and disseminating globally applicable *Sustainability Reporting Guidelines*. These guidelines are for voluntary use by organizations for reporting on the economic, environmental, and social dimensions of their activities, products, and services. The aim of the Guidelines is to assist reporting organizations and their stakeholders in articulating and understanding contributions of the reporting organizations to sustainable development.

GRI is also drafting a collection of technical protocols that offer specific guidance on various technical aspects of reporting within the GRI framework, including expectations related to measurement of specific indicators. In addition to the Guidelines and protocols, the GRI reporting framework also includes a growing number of sector supplements that are designed to provide indicators for use in conjunction with the Guidelines that highlight the specific issues that characterize a given industry sector. This initiative could help fill the existing public information gap concerning the environmental and social performance of mining companies, whereas willing mining companies can follow the GRI indicator measurement guidelines and publish additional information about their company performance. Those companies who display good environmental and social performance will benefit because it will improve their corporate image, which will increase trust among stakeholders and may also improve their capital stock since good performance may increase investment in the company. Furthermore, this initiative may pressure mining companies with poor environmental and social indicators into improving their performance in order to increase their competitiveness.

CONCLUSIONS AND RECOMMENDATIONS

The issue of the fiscal resources that mining activity generates and of transparency in their use is a delicate matter. It has to be managed in an appropriate manner in order to reduce the number and nature of conflicts between mining firms and the community. In Peru there is a high level of transparency in the publication of figures of profits made by the mining industry at the national level. Since July 2004, SUNAT has published internal profits by economic sectors (those not linked with imports of goods and services). This is a huge advance in terms of transparency and reflects the contribution of the mining sector to the canon because the funds from this transfer or compensation are based on mining company income taxes.

However, as mentioned, a lack of transparency arises in the distribution of the canon to local governments and in the use of these resources by local governments. Currently, civil society does not have much information about the destiny of canon proceeds. As a result, communities may believe that the mining sector does not contribute to the development of their jurisdictions because they do not receive information about the origin of local government resources. On the other hand, there is currently insufficient local awareness of the importance of addressing environmental problems and legacies and even if environmental issues became a local priority, current legislation stipulates that canon revenues can only be used for infrastructure projects.

Thus, there is a need for greater transparency about the distribution and use of mining revenue at the local level and for the provision of technical and educational training programs to improve transparency at that level. Local governments also need to learn to manage and use these

[163] "Global Reporting Initiative" An abridged version of the 2002 Sustainability Reporting Guidelines, integrated with the draft Mining and Metals Sector Supplement. June 4, 2004.

resources for local development projects and for addressing environmental problems. Specific recommendations to achieve these goals are:

1. Increase transparency in the canon calculation method for regional and local governments. This involves a communication campaign which clearly explains the methodology and highlights the fact that these transfers are pro-cyclical, i.e., dependent on international metals prices, which is why the revenues have been increasing over the past few years, but could also decline at any given moment. As mentioned above, greater production does not necessarily imply a larger canon because companies react to lower prices by increasing their mineral production. It is important to impress this fact on regional and local authorities, who often take it for granted that revenues are increasing, especially because decreasing revenues could generate conflict if local communities attribute this to mining companies deliberately reducing their contributions, or if communities believe that the national government is manipulating the amounts transferred via the canon and appropriating these resources.

2. Strengthen the role of the *Contraloría General de la Republic* (Comptroller General of the Republic) and of the Ministry of Economy and Finance so that they can exercise stricter control over the use of canon resources by regional and local governments. Currently, the role of these institutions is more oriented towards verifying whether the expenditures of subnational governments meet revenue and budget administration rules, than verifying the efficient use of the resources, and they do not ascertain whether they have been used for environmental projects.

3. Reinforce the role of the National System of Public Investment (*Sistema Nacional de Inversión Pública*) to enable it to produce manuals on environmental rehabilitation projects for regional and local governments. A technical guide of this kind is essential for the design and successful execution of environmental projects at the regional and local level.

4. Build capacity at the local level to enhance the accountability of authorities to citizens and improve fiscal management capabilities so that canon resources are used efficiently. At this level, it is important to strengthen the activities of the Integrated Financial Administration System for Local Governments (*Sistema Integrado de Administración Financiera aplicado a los Gobiernos Locales-SIAF-GL*) since it is an instrument that affords citizens insight into budget execution and one that tends to improve budgeting because it obligates all state institutions to comply with budget norms. Some of these activities are envisaged in the Institutional Capacity for Sustainable Fiscal Decentralization Technical Assistance Loan (TAL DECSAL), currently being executed by the World Bank Group. The TAL DECSAL is oriented towards improving capacity at the subnational level for regional and local governments, so that they can manage fiscal resources responsibly and avoid jeopardizing the macroeconomic stability of the country.

5. Amend the law to expand the options for using canon resources so that in addition to new infrastructure projects, they can also be used for maintenance of existing infrastructure projects, capacity-building and technical training programs, and environmental rehabilitation projects.

6. Promote environmental awareness at all levels of government and within communities of the serious health risks and threat to agricultural and livestock production posed by the environmental damage resulting from mining activities. Promoting awareness may stimulate interest in including environmental projects within subnational budgets using canon and other resources and create a constituency for implementing environmental projects. To this end, the GOP should actively participate and make the political decision to promote environmental awareness and remediation initiatives.

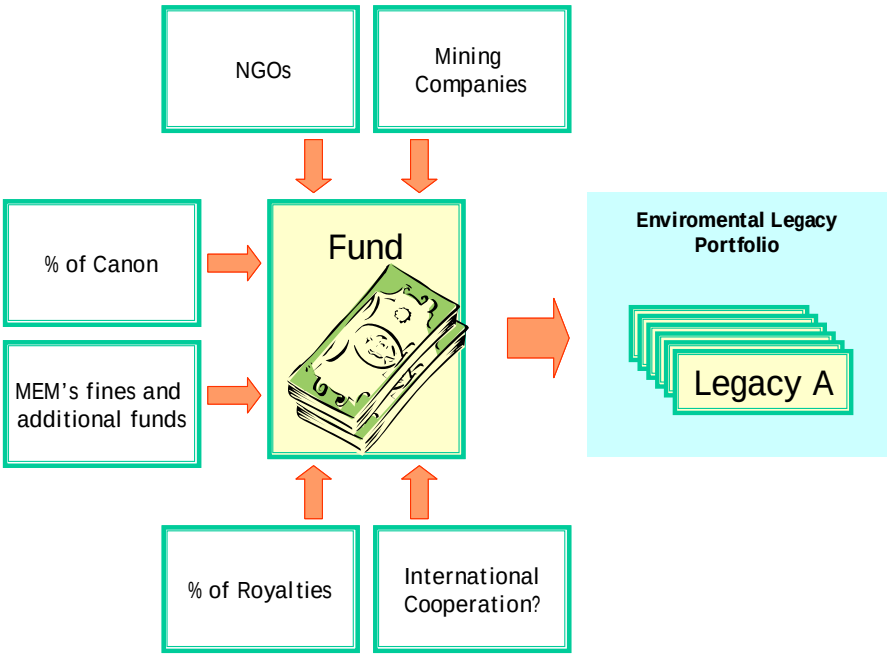
7. Assign the necessary GOP resources to obtain more accurate, systematic, and comprehensive information about environmental legacies and the costs of mitigating them. Once the data have been gathered, design market-based instruments and incentives to reward environment-friendly behavior (tax breaks for good environmental performance, load based pollution taxes, polluter list, etc.).

8. Co-finance or subsidize environmental projects through a GOP fund using a percentage of the mining revenues that the National Government collects from mining activities (from the 50 percent share of the revenue that is allotted to the Central Government from income tax-- not the 50 percent earmarked for distribution to regional and local governments). Initially, the contribution amount could be 5 percent of the mining company income taxes allotted to the Central government, gradually increasing in line with the results obtained with the environmental projects (improved air, water, soil quality, etc.). Another source of revenue for the fund would be the fines imposed on mining companies that do not comply with environmental performance standards. In addition, mining companies seeking to improve their corporate image by increasing their level of social responsibility could also contribute to this environmental fund. Finally, revenue could also be obtained through donations from NGOs and environmentally concerned entities. Once the environmental fund is established, it could function as follows: first the MEM or an autonomous organization should perform an inventory of all the environmental problems and then it should prioritize/classify these issues according to severity (health/environmental risk), project costs, and technical feasibility. Once this is done, a co-finance scale should be worked out in the following manner:

Problem Severity	Co-financing
High severity	75%
Medium severity	50%
Low severity	25%

Projects applying to tap this fund should follow the National System of Public Investment (SNIP) standards and should be presented to and approved by a committee with a panel of judges comprising both technical and independent members. This fund could be administered by the Ministry of Energy and Mines. The way the fund is structured means that regional and local governments would also have to make smaller monetary contributions to the environmental project in order to be eligible to receive co-financing for their projects. This fund would be a powerful incentive for subnational governments to allocate resources to environmental issues.

Diagram 8. Optional Fund Structure



9. Arrange for all stakeholders involved with mining activities to show how revenues were acquired or paid to them and the uses/destination of these resources. This should be performed in a consensual manner with a commitment from all actors, institutionalized through a Dialogue Group (*Grupo de Diálogo*), in order to minimize or solve mining activity conflicts.

10. Embark on an aggressive campaign to disseminate information in an appropriate manner, with NGOs helping to translate the data generated by state institutions into native languages and straightforward concepts, so that citizens are fully aware of the amount and use of mining revenues. In order to accomplish this task, it will be necessary to work in conjunction with numerous institutions and to elicit, above all, the commitment of regional and local governments.

11. Encourage stakeholder adoption of instruments that could help promote fiscal transparency, such as the Extractive Industry Transparency Initiative (EITI), which attempts to involve all mining activity stakeholders and ensure greater transparency in the source and use of revenues, and the Global Reporting Initiative (GRI), which encourages organizations to report the economic, environmental, and social dimensions of their activities. One initiative of this kind already exists, namely Mining Vigilance (*Vigilancia Minera*), run by the Citizen Proposal Group (*Propuesta Ciudadana*), which is trying to make the source and usage of mining revenues more transparent. These initiatives might be worth keeping in mind if stakeholders agree to adopt the EITI or GRI and want to tailor them to Peruvian needs.

CHAPTER 6: CONCLUSIONS

This study highlights the range and magnitude of some of the existing environmental and social challenges facing the mining sector in Peru. Prior to the 1990's, industry and government paid very little attention to ways in which environmental conditions could be improved and social tensions minimized. The institutional and policy changes during the 1990's have transformed the sector into one in which environmentally responsible mining takes precedence. Throughout the past decade, many key functions of the Ministry of Energy and Mines have consequently become environmental and social in nature. Undeniably, there has been great progress on many fronts and approaches to pollution and environmental degradation have changed in government and industry. In spite of the significant reforms and policies, there are still many challenges and constraints to be overcome in order to attain the institutional capacity needed to regulate the sector, to achieve environmental compliance, minimize environmental degradation, and avoid or address social conflicts.

Among the limitations for addressing some of these issues are a: (i) lack of public awareness about environmental issues, including mining environmental legacies; (ii) lack of baseline data for measuring environmental quality and risks from past and ongoing mining operations; (iii) widely held view that environmental quality and economic growth objectives are incompatible; (iv) weak institutional framework, including the absence of an independent and strong authority to enforce environmental laws and regulations, and which could share the burden of environmental licensing with the line ministries; and (v) limited financial and human resource capacity to carry out the licensing, monitoring, and enforcement tasks.

The **mining environmental legacies (MELs)** in Peru represent a major challenge, for which the government has assumed certain responsibility (by committing seed funds) but has not yet fully addressed. Government MELs have not been addressed and there is a lack of information as to their impacts and remediation costs. The legal implications of who is responsible have led to the identification of "abandoned" MELs. A study reveals that the total estimated capital needed to handle all of the abandoned mine sites exceeds US$250 million (excluding state-owned legacies). Experts, however, doubt on the accuracy of this amount. The costs attributable to MELs in terms of health impacts, environmental degradation, loss of productivity, and damage to infrastructure are unknown at this point in time. Thus it would be important to develop further knowledge in order to understand the location and scope of the most critical MELs that need immediate attention.

To address this pressing issue, the proposed strategy should include: (i) enhancing and updating the current inventory by identifying and prioritizing the most critical MELs (based on health and risk criteria), determining their associated remediation costs, and their legal status, and filling other information gaps; (ii) based on this inventory and diagnosis, the GOP's efforts should focus on 'orphan' sites which pose a clear health, safety, or environmental issue; (iii) developing a strategy for addressing and remediating the most critical MELs together with a monitoring program; (iv) establishing a center of excellence for technical guidance; (v) setting an example, at the national level, by carrying out remediation of MELs left by state-owned mining companies (government should lead this effort); (vi) carrying out an awareness raising campaign (within government, regions and municipalities) on the risks of MELs; (vii) creating a MEL rehabilitation

fund[164]; and (viii) enhancing the capacity of FONAM to manage the fund and carry out MEL remediation. In addition, stronger measures to prevent future and new MELs ought to be developed.

Instruments for environmental governance such as **environmental licensing** play a crucial role in defining the rules of the game for industry and key stakeholders and ensuring that new mining operations adhere to a framework of environmentally responsible development. Likewise, they establish parameters that enable the government to monitor and ensure that mining and smelting operations are conducted according to environmental standards. The study concludes that the institutional structure for environmental management in Peru, based on environmental sectoral units, could be improved by a strengthened central environmental agency with licensing and enforcement powers that could help share the burden and responsibility of the licensing process (and in turn, ensure legitimacy and improve efficiency). Clearly each of the key instruments of environmental management[165] and its processes need to be strengthened and updated. Likewise the overall institutional capacity for its application needs to be revised and enhanced.

With regards to environmental governance, the study concludes that the MEM, CONAM and other organizations have to be strengthened so that they are able to efficiently use environmental licensing tools to regulate, audit and monitor the mining sector and so that they can better enforce existing environmental noncompliance fines. Specifically, the Environmental Impact Assessment (EIA) process could be strengthened by: (i) requiring that the guide for the elaboration of EIA's (the guide) becomes binding by law; (ii) improving and updating the contents of "the guide"[166]; (iii) preparing detailed terms of reference (currently not required by law) for the EIA of complex projects; (iv) sharing the responsibility of the licensing process with other governmental agencies; (v) establishing a decision-making panel (with key agencies) for the approval of the environmental license to operate (currently depending on one unit within MEM); (vi) integrating the EIA with a social impact assessment; and (vii) modifying the public audience process which currently is ineffective, to make it one which is focused, with limited and legitimate participants, and which is impartially moderated.

In addition, the study concludes that the Environmental Adaptation Management Plans (PAMA) could be improved by: (i) updating and enhancing the standards and criteria used for industry; (ii) requiring that mining companies will adhere to stricter and internationally recognized standards; and (iii) promoting environmental management systems and environmental certification schemes that would develop voluntary compliance by mining industries. Likewise, the auditing and enforcement system (with stricter penalties) will require enhanced capacity and an internal reorganization, in order to process environmental enforcement more efficiently.

Social conflicts related to mining usually stem from either unclear terms related to unclear land-tenure procedures or from environmental degradation (or concern that it will occur), which is then manifested in tensions between community and industry, creating mistrust among stakeholders. Furthermore, the lack of local capacity for negotiation and management can leave communities

[164] The fund could, as mentioned in Chapter 5, consist of revenues from: (a) a percentage (to be defined) of the 50% assigned to the central government from the mining canon; (b) mining fines and resources from MEM; (c) contributions from mining companies. Regions and municipalities interested in addressing their MELs can contribute on a matching basis (i.e., 10% region, 90% Fund), possibly through a percentage received from the mining royalty. For more details, see Chapters 2 and 5.

[165] Environmental Impact Assessment (EIA), Environmental Adaptation Management Plans (PAMA), Environmental Audits, Monitoring, and Closure Plans.

[166] For instance, by complementing missing sections with the World Bank's Safeguard Policies, and the Pollution Prevention and Abatement Handbook.

exposed and vulnerable, and with few opportunities to engage government, communities and industry in dialogue. Mistrust of the state's capacity to efficiently enforce regulations and penalize industry is a commonly perceived notion among community members. Land acquisition and resettlement processes are also complex and particularly conflictive. Rather than viewing mining as an opportunity for local development, many communities perceive mining as a polluting activity that affects water courses, produces emissions that contaminate the air, and has adverse effects on public health

This study concludes that there are steps that can be taken by industry, government and communities to improve dialogue and mitigate social conflicts, such as an early consultation process promoted by the government prior to the exploration phase. Regarding expectations, the mining company should clearly establish from the outset what it can and cannot commit to. In addition, operators should formalize the process by which agreements are reached on local employment policy and the benefits the mining company will provide to the local affected stakeholders throughout the various phases of mining. The government also needs to develop specific guidelines on land acquisition and the resettlement process. Likewise, the MEM should continue expanding its role as a provider of information and prepare guidelines for industry on how to address the most critical social issues. Furthermore, the GOP should consider the possibility of establishing a sector ombudsman, who would help mediate conflicts if the parties involved voluntarily accept his or her services.

The study also considers it crucial that local stakeholders build their capacity to participate in the mining project cycle, as well as being able to negotiate and engage in constructive relations with mining projects. On a project-by-project basis, the government, in partnership with the respective mining operators, should assess the specific needs for capacity building and then develop a serious process of supporting training activities for local stakeholders

While the GOP has made significant progress in promoting **fiscal transparency,** there are some identified areas which could be strengthened and thereby enhance trust among stakeholders. Likewise, the way information is disseminated needs to be improved (considering the capacity of local communities to understand complex fiscal transfer schemes). Mining companies have disclosed their finances and are often audited by Peruvian (and in some cases foreign) financial authorities. In spite of this progress in transparency, there are still some areas which need to be addressed, as this would help promote an environment of trust.

The study has determined that fiscal transparency needs to be strengthened in the following areas: (i) once the mining canon is distributed to the regions and municipalities, the way these resources are then re-distributed and spent is not widely disseminated; (ii) there is concern regarding regional and local capacity to have an effective accounting system, and some question the regional and local authorities' ability to select, finance and monitor projects; and (iii) further disclosure has to be promoted among all stakeholders involved (including civil society and NGOs).

Consequently, the study concludes that it is important for the GOP and/or relevant organizations to provide training to regional and local governments on how to record the acquisition and use of revenues (particularly those obtained from the canon) in a transparent manner. Furthermore, in line with the decentralization efforts underway in the country, capacity needs to be developed for the management (including financial, accountability and procurement procedures) of funds, so that there is greater transparency and trust, as well as a more efficient use of resources. It is important to note that this process will imply a steep learning curve. This study also analyzes

possible mechanisms for channeling mine proceeds to address the environmental and social issues created by mining operations.

It is evident that the mining sector in Peru has considerable potential to stimulate growth and development in Peru. However, there are still issues like MELs, environmental governance and social capacity issues, as well as fiscal transparency and revenue use concerns that need to be resolved in order to maximize these potential benefits and ensure that the mining sector in Peru operates in an environmentally and socially responsible manner.

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APPENDIXES

APPENDIX 1: MINING INVESTMENT AND POTENTIAL FOR GROWTH

Peru has significant potential for future mineral activities. For example, according to MEM only 1,200 of the 30,000 hectares offered for exploration in Las Bambas in the Apurímac region have been explored and all indicators point to the existence of much more high-quality copper. Las Bambas could in fact turn out to be several times the size of the current Antamina mine[167.] Hence, the country is well endowed with numerous identified mineral deposits and has important and attractive geological conditions and structures. Until the early 1990s, copper, zinc, lead, silver and iron accounted for about 97 percent of mineral exports, providing diversified minerals export structure and some stability vis-à-vis the fluctuations of commodity prices. By the late 1990s, gold evolved rapidly as a major mineral product, accounting for 34 percent of minerals exports in 2000, compared to 20 percent at the start of the decade**.** Furthermore, the volume of gold produced between 2000 and 2003 increased by 23 percent, according to the MEM. Currently, Peru is the sixth largest gold producer in the world, accounting for 6.1 percent of total worldwide gold production (SNMPE: 2004).

However, this recent narrowing of the range of exports and the country's increased dependency on international gold prices make Peru vulnerable to external macroeconomic shocks derived from price fluctuations.

Mineral Production

Gold: Peru is the 6th largest producer of gold in the world, with 6.1 percent of total worldwide gold production. In 2004, Gold Production was 200,000 kgf (SNMPE). Between 2000 and 2003, the volume of gold produced increased by 29 percent, principally due to the 65 percent growth of the Yanacocha Gold Mine's output, but also due to increased production by the Barrick, Horizonte, Poderosa, MARSA mines (MEM). Large-scale mining operations accounted for 66 percent of total production and medium-scale mining for 25 percent, and 9 percent was from gold panning (*lavaderos*). In addition, the market price for gold rose from around US$260/oz troy in 2001 to US$400/oz troy in 2004 (SNMPE).

Copper: Peru is the 5th largest producer of copper in the world and produces 6.1 percent of total world copper production. In 2004, total copper production in Peru was about 950,000 tmf (SNMPE). Copper output rose by 52 percent since mid-2001, primarily due to the start of operations of the Antamina Mining Company. The Antamina mine is also the largest worldwide copper-zinc producer and the second largest copper producer in Peru (MEM). Large-scale mining companies produce 96 percent of total Peruvian copper output, while medium-scale mining produces the remainder. In addition, the market price of copper rose from approximately US$1,500/tmf in 2002 to around US$2,800 in 2004 (SNMPE).

Zinc: Peru is the 3rd largest zinc producer in the world and contributes14.8 percent of total world output. In 2004, total production of zinc in Peru was approximately 1,200,000 tmf (SNMPE).

[167] MEM. "Exploraciones pueden cambiar historia de Apurímac. Las Bambas puede ser mucho más grande que Antamina, dice Ministro Jaime Quijandría". [Exploration may change the history of Apurimac. Las Bambas may be much bigger than Antamina, says Minister Jaime Quijandría] Press release. Lima, August 31, 2004.

Zinc production grew by 50 percent between 2000 and 2003, also mainly due the start of operations of the Antamina Mining Company, which is the largest zinc producer in Peru (MEM). Large-scale mining produces 43 percent of total zinc output, while medium-scale mining produces 56 percent, and small-scale mining produces 1 percent. In addition, the market price of zinc rose from about US$750/TM in 2002 to US$1,050/TM in 2004 (SNMPE).

Lead: Peru is the 4th largest lead producer in the world, contributing 11.4 percent of total worldwide lead output. In 2002, total production of lead was 300,000 tmf (SNMPE). In the past three years, lead production in Peru rose by 14 percent (MEM). Large-scale mining makes up 20 percent of total lead production, while medium-scale mining accounts for 78 percent of output and small-scale mining makes up 2 percent of total Peruvian lead production. In addition, the market price of lead rose from around US$ 459/tm in 2002 to approximately US$ 800/tm in 2004 (SNMPE).

Silver: Peru is the 2nd largest producer of silver in the world, contributing 14.1 percent of worldwide silver production. In 2004, Peru produced almost 3,000,000 kgf of silver (SNMPE). In the past three years, silver production in Peru rose by 14 percent (MEM).). Large-scale mining makes up 33 percent of total silver production, while medium-scale mining accounts for 65 percent of production and small-scale mining makes up 2 percent of total Peruvian silver output. In addition, the market price of silver rose from around US$ 4.50/oz troy in 2002 to approximately US$ 6.50/oz troy in 2004 (SNMPE).

APPENDIX 2: METHODOLOGY

Methodology

Determining the Key Priorities

In order to determine the key priorities to be discussed in this study, a literature review was conducted, which included various recent participatory studies carried out in Peru concerning the mining sector. In the Mining, Minerals and Sustainable Development (MMSD) study carried out in Peru in 2002, important themes were prioritized by the multi-stakeholder audience. The scope of this study therefore concurs with the themes prioritized by those users.

It was agreed that environmental management and legacies, framework or capacity to address social issues, and fiscal transparency and revenue distribution were the areas in which this study could make the greatest contribution to elucidating the social and environmental dimensions of the mining sector in Peru. These and other themes were discussed in preliminary targeted consultations with representatives from the private sector (the National Society of Mining, Petroleum and Energy, SNMPE), the public sector, and civil society (the *Grupo de Diálogo* – Dialogue Table). The priorities were validated in these consultations and then discussed in detail with the General Directorate of Mines (MEM) and with international experts who participated in a process of defining the areas of most concern in terms of environmental and social issues in the mining sector in Peru.

Identifying Best Practices

Based on these priorities, a literature review and extensive consultations with international experts provided information on international best practices and lessons learned that could be applied to Peru. Consultations were held with national specialists and ministry staff as well as with World Bank, International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA) staff, the Andean Development Corporation (CAF) and the Inter-American Development Bank (IDB). Best practices and lessons learned in other countries are analyzed to show how they can be adapted to specific circumstances in Peru.

Developing a Strategic Framework for Peru

In order to provide a series of short-, medium- and long-term recommendations for Peru, best practices, industry standards, and lessons learned were applied to the priority areas. These recommendations provide specific guidelines for implementation and an analysis of who the beneficiaries of the action will be, as well as a discussion of possible risks and funding possibilities. It is hoped that this framework will provide the GOP with practical steps to achieve its goal of improving the social and environmental aspects of the mining sector.

APPENDIX 3: MINING ACTIVITIES IN PERU

Mining in Peru dates back to pre-Columbian times. However, its expansion over the past few decades has also led to significant environmental degradation and pollution. The most important products of the Peruvian mining industry ranked by their percentage of total global mineral production and contribution to national GDP are gold, copper, and zinc. Secondary products include silver, lead, tin and iron. There are also sub-products of other metallic minerals (molybdenum, manganese) and non-metallic minerals (ornamental rocks, phosphates, sand, gypsum, etc.). The non-metallic minerals industry is still largely undeveloped due to the low price-volume ratio and prohibitively high transportation costs, which discourage exports. There is also no public policy currently providing incentives to further develop this branch. Given the relatively small size of this sub-sector and its limited prospects for expansion, this report primarily focuses on metallic mining operations.

Mining operations are either: (i) large-scale; (ii) medium-scale; (iii) small-scale and/or artisinal. Each of these categories has specific elements that characterize its operations and each category differs in its capacity and commitment to addressing the environmental and social issues it generates.

Large-Scale Mining Operations

These are generally run by foreign companies, often in partnership with local corporations. These companies are the leading producers of gold and copper. They tend to use modern open-pit mining exploitation methods and sophisticated, cutting-edge equipment. In such mining operations, the environmental issues are mostly confined to the risk of cyanide or acid solution leaks, natural leaching of the stockpiles of waste materials exposed to the elements, dust (particles), noise, and disruptions of the local topography. The mining camps are typically modern, with running water, sewage treatment plants, and other facilities for workers. These companies often take a leading role in providing basic services (lighting, paved roads, etc.) to local communities, as well as sponsoring educational and capacity-building programs.

The large-scale producers are well known international companies such as Barrick, Newmont, Phelps Dodge, BHP-Billiton, Noranda. Glencore, Teck-Cominco, Southern Peru, Shougang, as well as some national companies, including Cia. Minas Buenaventura, Minsur, Volcan Mining, Atacocha and Milpo Mining Co.

Most of these companies tend to adhere to high environmental standards and are regarded as having an adequate environmental record. Moreover, large-scale miners are often more conscious of their public image and are therefore generally keen to project a positive image in terms of environmental and social performance.

Despite these companies' recognized performance and capacity to address environmental issues, residents in nearby communities are concerned that the frequent use of toxic substances such as cyanide, acids, explosives, mercury and the emissions from smelting operations could have detrimental environmental impacts and affect their water quality, livestock and general health. In light of past mishaps, these are not unwarranted fears either (some of the accidents are discussed in this study).

Medium-Scale Mining

Medium-scale mines are mostly owned by Peruvian companies. They tend to run both open-pit and underground mining operations. However, most of their production comes from underground mines. These companies have fewer resources and less capacity to operate in a manner compatible with environmental standards, and therefore their activities can be very damaging and polluting. Protests by local communities against medium-scale mining, however, tend to be less clamorous than those against large enterprises. These kinds of companies are less likely to be flexible and less apt to incorporate environmental management systems or other voluntary compliance agreements.

Small-Scale Mining

Small-scale and artisinal mining operations are mostly in the hands of individuals and focused on the production of gold. Most small-scale mining operations use low-tech methods that seriously pollute the environment and can operate up to 350 tons/day. There are no official figures on the number of individuals or groups currently involved in this activity, but one estimate indicates that there may be as many as 50,000. In the Madre de Dios area alone (in the Amazon Basin), gold worth approximately US$125 million was produced in 2003 through small and artisinal extraction on river banks.

The environmental impacts of small and informal mining depend on the type and area of operation. Artisinal operations have only minor environmental repercussions given that they produce only small amounts of gold and remove little material, so the jungle vegetation can easily recover. Likewise, the effects of exploitation of river banks and beaches are quickly reverted when rivers swell during the rainy seasons. Front-end loaders in the Andean foothills and the Madre de Dios area have by far the greatest environmental impact, particularly given the large number of producers in the area and the considerable quantities of mercury, oil and lubricants that are used and periodically discharged into the rivers. All of these operations are carried out without any environmental control. In other areas, such as Puno and Nazca, extraction takes place in precarious subterranean mines where workers (including children) perform all labor manually. In practice, there are no safety regulations or environmental controls, and the government has little or no capacity to enforce or monitor these operations. Small-scale and artisinal mining in Peru is similar, in terms of its principal characteristics and drawbacks, to those in Bolivia, Ecuador and Brazil[168].

As mentioned previously, although small-scale mining has significant environmental and social impacts, this document will not focus on it since: (i) there are multiple studies available on the subject[169]; (ii) the GAMA-COSUDE Project plans to address small scale mining, and (iii) some of the analysis and recommendations of this report will be applicable to and could prompt improvements in small and artisinal mining.

Environmental Impacts

Unlike other sectors, the potential environmental and social issues associated with mining and ore processing are considerable and complex. The geographical location of a mining complex or a smelter imposes constraints on all aspects of mining development, including extraction methods,

[168] McMahon, Gary; et. al (1999) An Environmental Study of Artisanal, Small, and Medium Mining in Bolivia, Chile, and Peru. The World Bank Technical Paper No. 429.
[169] Studies include: (i) An Environmental Study of Artisanal , Small, and Medium Mining in Bolivia, Chile, and Peru by the World Bank; (ii) Minería Informal y Medio Ambiente en el Perú, by GRADE/Pasco-Font, Alberto; the MSSD Report; etc.

location of mining facilities, new infrastructure and services requirements, and the suitability of waste management or disposal methods. These factors in turn can profoundly influence the environmental, social and health implications of mining developments, as well as the economic viability of developing a deposit.

The environmental and social issues associated with mining activities are well documented in Peru. Environmental impacts are known to occur during each phase of the mining cycle: (a) exploration; (b) mine development; (c) extraction (underground and open pit) and mine operation; (d) ore beneficiation/processing; (e) storage and transport of ore; and (f) mine rehabilitation. Depending on the process employed in each phase, environmental impacts can be generated through: (i) improper disposal of waste rock; (ii) air pollution from smelting operations; (iii) inadequacy in tailings containment, treatment and disposal of toxic wastes, which often leak to water sources; (iii) construction of infrastructure, road access, and operation of energy plants; and (iv) construction of work-camps and operational town-sites. In turn, each of these activities has the potential for creating adverse impacts on the air, hydrology and water quality, on biodiversity and ecosystems, on health and safety and on infrastructure. While the obvious impacts may occur in the immediate vicinity of the mine and its waste dumps, communities and ecosystems further away may also be exposed to the adverse impacts of mining operations (particularly if wastes leak to watersheds which carry these substances to remote areas).[170]

Exploration companies

Widespread exploration has taken place in Peru over the past decade, much of it conducted by "junior" (mainly Canadian) companies. Most of the large companies that engaged in mining during the 1990's focused on the purchase of existing mining operations, mainly from state-owned enterprises, and did little exploration. However, today large foreign companies, medium-sized (Peruvian) companies, and small mining operators are all engaged in exploration, and the areas have increased. While exploration presents a small environmental risk, the main impact tends to be of a social nature. Often, the exploration companies begin operations in remote regions and do not make an effort to inform the community of their operations and or establish any kind of relationship. There is simply no incentive on their part to develop any kind of cordial relationship with those living in the vicinity.

Once ore is found, the land is sold and the mining concession can be offered to an interested company. Problems may arise, however, when the company wants to begin mine development and encounters resistance and antagonism with the nearby community due to the lack of prior efforts to consult with and engage that community. Regarding environmental standards, there are strict norms designed to reduce any harm mining development activities may cause (mostly due to road building and drilling). Generally speaking, foreign and established domestic companies abide by these norms; however, smaller operators often do not.

Exploration activities

The exploration phase includes all activities in the field that precede feasibility studies and an elaborate environmental impact assessment (EIA). This may include initial reconnaissance flights and geophysical and hydrological surveys, and the construction of access roads and clearings for the installation of drilling stations. Some impacts may depend on: (i) proximity of surface waters to drilling sites (particularly those used for drinking water); (ii) construction of new access roads; and (iii) possible repercussions to natural and endangered habitats in or around

[170] Mine Closure and rehabilitation is described in further detail in the environmental legacies chapter.

the drilling areas; (iv) construction of temporary installations and power generation for the drillings.

The potential significance of environmental and social impacts during the exploration phase has often not been recognized (perhaps because any impacts tend to be less severe than those of the ore extraction phase.) Nonetheless, experience suggests that this is the first point of conflict on many issues[171]. Impacts in this phase can be partially averted by restricting land clearance to a minimum, removing or disabling drilling infrastructure after exploration is done, use of helicopter access for personnel and equipment whenever possible (to avoid road construction); and developing plans for managing contact with local communities and rehabilitation of exploration sites.

Ore processing and smelting operations

Ore processing varies by type of mineral and mine. It may involve beneficiation, where the ore is concentrated for further processing or graded for sale (to be followed by further metallurgical processing and refining). Beneficiation (for some ores) consists of crushing and/or grinding, concentration by gravity or magnetic separation or flotation, followed by dewatering and filtration. The outputs of this process, if not handled appropriately, can lead to serious environmental impacts, including ore concentrates and waste materials in the form of tailings (which may include processed chemicals and heavy metals) and dust emissions[172]. Metallurgical processing usually involves the isolation of metal substances from ore concentrates through a process involving roasting and smelting (pyrometallurgical methods) which generate air pollutants such as sulfur dioxide, particulate matter and heavy metals. Hydrometallurgical methods typically retain pollutants in the aqueous phase, and those that are not recycled are discharged in tailing ponds. Some of the chemicals used in this phase (such as cyanide, mercury, and acids) can be extremely polluting and thus ought to be handled appropriately during storage, transportation and handling (see table 3 on p. 28).

There are currently three smelters and refineries in the country:

- The smelter and refinery at La Oroya (which processes copper, lead, zinc, silver, gold and other minerals), located in the center of the country and built in 1920 by Cerro de Pasco Corp. This complex was nationalized by the Peruvian government in 1974 and run by Centromin, and privatized in 1997, when it was sold to Doe Run.
- The zinc refinery in Cajamarquilla, located 25 km east of Lima, was built in the 1970s by the government and privatized in 1995 in a sale to Teck-Cominco and Marubeni; and
- The copper smelter at Ilo (in southern Peru) which belongs to the Southern Peru Copper Corporation (SPCC).

The smelters at La Oroya and Ilo are known to have had serious past and ongoing environmental problems and are, consequently, undergoing extensive remedial and modernization programs to address these issues.[173]

[171] As witnessed in the recent (September 6-8, 2004) demonstrations and road blockades by the local community protesting against the exploration of Cerro Quilish in Cajamarca by Compañía Minera Yanacocha.
[172] Environmental Assessment Sourcebook Update (1998); No. 22 Environment Dept., The World Bank.
[173] MEM – Interview with General Director of Mines (2004).

APPENDIX 4: RECENT MINING CONFLICTS

Box 13. Tambo Grande Mining Conflict

Tambo Grande is a town located in the rich fruit growing region of the San Lorenzo valley and is the origin of most of the limes and mangoes grown in Peru. The water system in this area is very fragile due to the arid nature of the region and the valley is provided water by a World Bank-funded irrigation system. According to Oxfam America, "these and other crops create about large revenue annually and permanently employ roughly 15,000 people"[174]. In 1989, the Fujimori government granted Manhattan Mineral of Canada a mining concession for three blocks of land in the department of Piura, in north-western Peru, without prior consultation with Tambogrande's inhabitants. The exploration license requires the approval of the population (which initially granted it).

The Manhattan Minerals Company had hoped to acquire a 75 percent stake in an open pit mine and processing plant project, while the remaining 25 percent would belong to the state-owned enterprise Centromin Peru. However, the project would require the relocation of about one fourth of the residents in the town of Tambo Grande, around 8,000 people. Stage one of the proposed mine was to consist of the construction of a kilometer-wide open pit and a 7,500-t/day oxide ore treatment plant, estimated to cost US$180 million. Gold and silver would be recovered from probable reserves of 8.9 million tonnes. Stage two was to start four years after operation, costing around US$145 milllion and was to include expanding the plant to 20,000 t/day to recover base and precious metals from sulphide ore. The project was estimated to last 17years and estimated. The Tambo Grande concession is particularly appealing to Manhattan Minerals because there are another 150 million tonnes of resources estimated on the property[175].

The Manhattan Company completed a feasibility study and an environmental impact statement (EIS) which led to a referendum. The mining company promised to employ local workers, improve roads and sewage systems, and provide new homes for all the relocated families.

Due to the economic dependence of most inhabitants on the region's fragile water and land resources, Tambo Grande mine development is a very sensitive issue. Consequently, the town of Tambo Grande started a petition drive and held a referendum in 2001, which showed that the majority of voters opposed mine development in the region. Accordingly, 93% of the community rejected the mine development in the referendum. This opposition was based upon fears by local inhabitants of water pollution and damage to their crops and to the tropical dry forest ecosystem that would result in a loss of agricultural jobs and lead to widespread poverty within the region. However, the Manhattan Company claims to have backing from Tambo Grande residents and an environmental engineering professor at the University of Piura, and claims it presented the government a "carefully prepared and through submission that would ensure, subject to community approval, the responsible development of the Tambo Grande project" (Scales).

However, in December 2003, the Ministry of Energy and Mines (MEM) rejected the Manhattan Company's Tambo Grande mine development proposal, saying that Manhattan was in default on the option agreement and the option was terminated. The GOP is now planning to schedule formal workshops and community participation and comment meetings to provide prior consultation, disseminate information and promote dialog between the GOP and community over about potential economic development activities. Nonetheless, the Manhattan Company objects to the MEM's decision and plans to contest it.

[174] "Tambo grande, Peru". Earthworks. Oxfam America. http://www.oxfamamerica.org

[175] Scales, Marilyn. "Doing Some Digging-Tambo Grande Torpedoed" Canadian Mining Journal. January 2004.

Box 14.The Antamina Conflict

The mining complex at Antamina is operated by Compañía Minera Antamina S.A. (CMA), with foreign ownership shared by Teck Cominco Limited, Noranda Inc. and BHP Billiton and Mitsubishi Corporation, and is one of the most modern operations in the country. The company constructed a pipe to transport concentrates from the mine to the port of Huarmey. Residents of the port complained that the water used to transport the concentrate was polluting their crops (also used to irrigate a forest). Through a Multi-sector Commission and its Ancash Foundation, the company managed to coordinate with the government a series of agreements and social investment activities in the area, which have seemingly cooled tempers and improved relations.

Box 15. Junin Lake and the Mantaro River Watershed

Junin Lake and the Mantaro River Watershed

The Junin lake is located in the center of the country in a region that produces 10 percent of the world's zinc. The lake has been exposed to generations of pollution from iron oxides resulting from operations at the Cerro de Pasco mine, and other mining activity dating back to colonial times. Despite some interventions financed by the Inter-American Development Bank (IDB) and Canada (in 1978 and 1994, respectively) to perform engineering studies and rehabilitation work, an environmental diagnosis carried out in 1997 revealed serious damage to the quality of the lake and its aquatic ecosystems (particularly in the effluents of the Mantaro River and the northern part of the lake.) It also revealed that water from the lake is inadequate for either human consumption or agricultural activities. The pollutants include acidic drainage from mines and tailing dams, and waste deposits which have drained into the water bodies. Currently there are studies to assess conditions and ultimately improve the quality of the Lake.

APPENDIX 5: WATER POLLUTION AND WASTE ISSUES

One of the main polluting concerns in relation to mining activities stems from the large volume of solid waste generated, including tailings from processing. Removal of overburden to access the ore can pose major problems in storage and rehabilitation. The overburden (waste-to-ore) ratio for surface mining of metal ores generally ranges from 2:1 to 8:1, depending on the site and type of ore. The ratio for solid wastes from underground mining is typically 0.2:1. In operations where concentration or other processing of the ore is done on site, the tailings generated also have to be managed. Ores with a low metal content (less than 0.4 percent), generate significant quantities of tailings. There are a number of known examples in Peru in which inadequate waste rock and tailing disposal practices exacerbate the environmental impacts. This has been documented above all with regard to the copper industry (Southern Peru Copper Corporation)[176]. The Ite Bay where the tailings have been deposited has undergone remediation.

Another problem is that drainage and waste loads from mines with high sulfur content ores can become highly acidic and may contain high concentrations of dissolved heavy metals, which often end up in nearby watersheds. Effluents from tailings ponds may also contain concentrations of chromium (of several milligrams per liter). Furthermore, base metal mining tailings decant may contain high concentrations of thiosalts. Chemicals used in flotation and other metal concentration processes could create toxicity problems when released in effluents. Surface runoffs may also pose significant environmental problems through erosion and carryover of tailings and other mining residues. In addition, it is common to find explosives (such as ammonium nitrate) in surface runoff. In addition, the transportation of mined material and machinery maintenance and repair can lead to contamination of surface water, by solids in suspension.

Pollution by chemical effluents has been recorded in a number of mining sites throughout Peru including: (a) dust spillage from the toxic deposits at the Mayoc mine in Tamboraque, which are believed to be the leading cause of health impacts in adjacent communities and currently pose a risk to the Rimac river (the main water supply source for the Lima metropolitan area); and (b) in 1997 it was reported that in the northern tributaries of the Mantaro River and parts of the Junin lake -- areas where the negative impacts of the mining industry have accumulated for over a century -- virtually all aquatic life has been eliminated and water is unfit for human consumption or agricultural use.[177] All in all, it is estimated that mining and metallurgical activities discharge an estimated 13 billion cubic meters of effluents to water bodies throughout the country (Chang 2003).

[176] Maessen, Odilia. Impacts of Copper Mining on Water Resources in Peru. International Development Research Center website. http://web.idrc.ca/en/ev-39316-201-1-DO_TOPIC.html, March, 2004.
[177] Chang, Marcos Alegre. Salud Ambiental en el Perú: Diagnóstico y Estrategias de Acción. World Bank report, Lima 2003. For Official Use Only.

APPENDIX 6: EXTRACTIVE INDUSTRIES REVIEW

Box 16. The Extractive Industries Review

The WBG recently concluded an extensive review of its activities and future role in oil, gas and mining production (extractive industries -EI). The review included **internal evaluations** of past WBG EI activities and an independent **stakeholder consultation process** (Extractive Industries Review - EIR). The major conclusions of the reviews were:

- ***Extractive industries can contribute to sustainable development,*** when projects are implemented well and preserve the rights of affected people, and if the benefits they generate are well-used; and
- ***There is a continuing role for the Bank Group in supporting EI*** provided its involvement supports poverty reduction and sustainable development**.**

The reviews drew attention to the many complex issues that need to be addressed if EI is to contribute to sustainable development and poverty reduction. In the consultation, there was broad agreement on what these issues were, but less on the specific recommendations of the EIR. While the independent internal evaluations found that WBG EI activities had been at least as successful as its overall operations, they identified ways in which the WBG could be more effective.

In its **Management Response**, the WBG confirmed it will continue to help its member countries develop their EI, including oil and coal, in a way that contributes to sustainable development and poverty reduction. In this respect, it will work actively with governments, investors and other stakeholders to:

- ***Give greater focus to governance:*** WBG Country Assistance Strategies (CASs) for EI-rich countries should explicitly address key EI issues; governance issues related to WBG EI projects should be carefully reviewed and the rationale for WBG engagement made clear; and, in the case of the largest EI projects, the risks that revenues will not be used well mitigated. When the balance of risks is not reasonable the WBG will not be able to support projects.
- ***Push for greater transparency of EI revenues*** by strongly supporting initiatives such as the EITI (Extractive Industries Transparency Initiative); by requiring transparency for EI revenues in the largest WB projects supported immediately and expecting it for all our EI projects within two years.
- ***Better ensure communities benefit from projects*** by requiring greater disclosure about expected and actual impacts and benefits of EI projects that the WBG supports; by developing specific development indicators that can help measure and guide poverty outcomes for EI projects; by implementing specific requirements on the use of security forces to protect EI project sites; by broadening positive community impacts through initiatives such as SME programs; and, by only supporting projects that communities broadly support after free prior informed consultation.
- ***Update safeguard policies and guidelines*** in EI related areas through an active process of consultation with stakeholders so as to ensure that environmental and social risks of EI are better addressed.
- ***Help address climate change concerns*** b***y*** promoting the use of renewables as an economic choice for countries; growing our own annual investment commitments by 20% per annum; helping promote more effective international approaches/partnerships; by actively supporting gas investments; and, by encouraging and helping developing countries take advantage of fossil fuel use related carbon emission trading opportunities.

The WBG approach was endorsed by its and the final Management Response and related documents are accessible at http://worldbank.org/ogmc/. Over the next 6-12 months the WBG will implement the proposals of the Management Response, and will refine its approach in certain areas in consultation with stakeholders as appropriate. Final approaches in some areas will depend on other processes that are well underway, such as the revision of IFC's safeguards and disclosure policy and the revision of IBRD/IDA's Indigenous Peoples policy. It intends to report to its Board on an annual basis on progress and will set up a working level Advisory Group of stakeholders from developing countries and elsewhere to help it identify best practice and keep in touch with developments in the sector.

APPENDIX 7: ENVIRONMENTAL LEGACIES ELIMINATION PROJECT (EPA PROJECT OBJECTIVES)

The objectives of the EPA Project which closed in 2003 can be summarized as follows:

- Produce a diagnostic assessment of the environmental impacts of each mining legacy;
- Draw up a detailed national inventory, identifying each legacy with its geographic location, key environmental risks, legal status, and physical characteristics;
- Identify and develop technologies for environmental rehabilitation;
- Carry out studies and works to remediate and rehabilitate the areas affected by environmental legacies;
- Take preventative measures to avoid the generation of acid drainage from mining operations, clearing and leveling of abandoned tailings;
- Reduce the risk of cracks or leaks in abandoned tailings; and

Reduce, neutralize and/or eliminate the negative effects of environmental legacies on public health, flora and fauna, and economic activities in the surrounding areas, by, among other things, restoring and enhancing water, land and air quality through a series of actions, including reforestation.

APPENDIX 8: TECHNICAL OPTIONS FOR REMEDIATING MINING LEGACIES

A sound physical reclamation and rehabilitation of abandoned mines and its legacies should contemplate the following technical options that coincide with World Bank and MEM environmental safeguards:

- Permanent sealing of underground workings and all mine openings, and prevention of water and gas leakage that could cause adverse impacts to neighboring mines or to the environment;
- Ensuring that any open pit or open cut features are stable and do not pose a risk to humans, animals or the environment;
- Removal of all material and equipment lying at the surface;
- Demolition of surface buildings and structures unless there is a productive use for them;
- All steps necessary to ensure the safety of tailings and slurry ponds, spoil heaps, waste dumps, stock piles and any other surface features that might pose an environmental or human hazard; and
- Restoration of surface land including clean up of the premises, leveling the ground and re-vegetation;
- Establishing the nature of any water remaining in the open pit and treating it if necessary;
- Ensuring that there is easy access to the water in the open pit to allow animals, children and adults who might fall in a way out, or backfilling the open pit;
- Rehabilitation of waste dumps including surface drainage, redesign of slopes to an acceptable angle and re-vegetation;
- Rehabilitation of natural water courses and also subterranean water directly affected by mining operations;
- Ensuring that the water sources present in the concession are free of contamination or plan a cleaning program for these waters[178]; and
- Monitoring of results for a specified period after the completion of remediation.

[178] Affected waters should undergo a serious hydro-geological study that demonstrates there is no metal mobility within the subterranean water

APPENDIX 9: ENVIRONMENTAL LICENSING PROCESS AS AN INSTRUMENT TO AVOID LEGACIES

Prior to the Basic Law on Environment enacted in 1990 there were no specific legal requirements regarding mine closure. Since the 1990's, project proponents have been required to include, as part of the environmental impact assessment (EIA), a closure plan that identifies the problems, the focus, the objectives and the costs involved in the mine closure process (the law for mine closures makes this a separate process).. According to DS-016 (corroborated by the Código de Medio Ambiente y de los Recursos Naturales (*Code of Environmental and Natural Resources)* of 1990), an EIA must be prepared and presented if the *title holder* of a concession seeks permission to operate, or if a working operation seeks to increase production or the size of the *planta de beneficio (treatment plant)* by more than 50 percent. The purpose of the EIA is to establish the environmental conditions that exist around the areas of influence of the project before commencing operations, in order to evaluate the possible impacts and methods of prevention and mitigation. The EIA requires a complete evaluation and a multi-disciplinary and interdisciplinary analysis of the environmental conditions that exist in the area of the proposed project and, if necessary, proposes adequate alternatives to develop the components of the project in harmony with the relevant conditions. It is assumed that, if all project proponents adhere to a serious EIA process and carry out measures prescribed in the closure plan well before mining operations cease, environmental legacies should be properly managed and averted.

Likewise, mines and smelters already in operation at the time the new legislation was passed were obliged to meet new performance standards through the Environmental Management and Adaptation Programs (*Programas de Adecuación y Manejo Ambiental*-PAMA). The timetable established for the implementation of PAMA was five years for mining operations and 10 years for smelters. The PAMA were established on Preliminary Environmental Evaluations (EVAPs) for individual mining operations. Each PAMA had to be endorsed by the MEM and had to contain a binding catalogue of environmental rehabilitation measures along with an annual detailed budget for executing the PAMA. Thus, it was to be expected that, to fulfill the PAMA, mining companies would drastically reduce their emissions to the maximum permissible levels (MPLs) established by law, and hence reduce the potential for legacies (assuming that they also adhered to an agreed-upon adequate closure plan).

APPENDIX 10: INTERNATIONAL FINANCE CORPORATION'S (IFC) MINING GUIDELINES

According to the guidelines, mine reclamation plans should incorporate the following criteria:

- Return of the land to conditions capable of supporting prior land use, equivalent uses, or other acceptable uses;
- Elimination of significant adverse effects on adjacent water resources;
- Use of waste rock for backfill and topsoil (or other acceptable materials) for reclamation to the extent feasible;
- Contouring of slopes to minimize erosion and runoff;
- Planting of native and other environmentally acceptable species of vegetation to prevent erosion and to encourage self-sustaining development of a productive ecosystem on the reclaimed land;
- Post-closure and management of mining deposits and tailings. Reduce deposit formation by sealing of pyrite containing waste from consolidation and percolating water;
- Budget and schedule for pre- and post-abandonment relocation activities;
- Upon mine closure all shaft openings and mine adits should be sealed and secured;[179]

[179] Middleton, John. The Approach of the International Finance Corporation to Sustainable Mine Closure. Presentation, June7, 2004: Mining Seminar: Global Investment, Local Challenges

APPENDIX 11. EIA-LICENSING BEST PRACTICES

Alto Chicama's EIA

In order to mitigate the environmental impacts of the project on the landscape, the following measures are incorporated:

- The principal installations of the project will be located in areas that minimize the impact on the community's visual radius.
- The incline of the cuts will be constructed within a rage of 35-40 degrees
- The final angles of the clearing installations will be 2,5H:1V

The following restoration/rehabilitation/revegetation measures have been included:

- The contour of the cuts will be restored up to 2,5H:1V to facilitate the placement of coverings and the recuperation. The plane surfaces will be leveled up to 2% to prevent water reservoirs
- The buildings, platforms and other infrastructure that is not necessary after mine closure will be demolished, the residual retired and the areas restored.
- The demolition residuals will be appropriately managed once the project has retired and there will be a procedure for correct disposal
- The surface soil will be renegotiated, the subsoil material piles and cut areas that are no longer needed will be refilled to control erosion and restore visual aesthetics.
- At closure, the areas in which the primary project installations were located will be restored and revegetated.

SOCIAL

APPENDIX 12: THE MINING OMBUDSMAN

Proposed Ombudsman Office

The proposed Ombudsman's Office is an autonomous, independent, and neutral body whose main function is to prevent conflicts among stakeholders (communities, organizations, institutions, authorities and companies) involved in the development and execution of mining projects. The Ombudsman is also in charge of mediating, reconciling and facilitating the search for solutions, should a conflict or controversy arise as a result of a mining project execution. The Ombudsman's Office must act as a mediator, conciliator and facilitator among the stakeholders in conflict, for direct or indirect reasons regarding the mining life cycle. It can also recommend actions to prevent a conflict occurrence, and render its services to find a solution.

The Ombudsman's Office is neither a judicial nor an investigating office, thus it may not make decisions regarding a conflict situation. Yet, it may propose mechanisms leading to a resolution. It should also supervise compliance with the agreements entered into by the stakeholders.

The Ombudsman's Office works in a neutral way within a mining project. It may not align with any party in conflict.

In this sense, the Ombudsman shall not act as judge or prosecutor, nor replace any existing authority. It would seek to resolve specific problems, rather than finding parties to blame. Its authority lies in persuasion, behavior modification proposals made on its recommendations, the development of preventive protective strategies, the mediation it performs to find solutions, and its capability to make public denouncements in extreme cases.

Proposed Ombudsman Mission and Vision

The mission of the Ombudsman's Office shall be to minimize the number and significance of environmental and social conflicts in a mining project cycle and reconcile existing ones, making sure that all stakeholders involved obtain the maximum possible benefit resulting from the mining project. The Ombudsman's vision shall be:

- All stakeholders involved acknowledge its function and know how to request its intervention.
- All stakeholders acknowledge that the Ombudsman has helped them to enhance their participation regarding the benefits derived from the mining project.
- Conflicts were avoided because they were foreseen.
- The experience has been standardized as an Ombudsman model for mining projects.

Objectives

The Ombudsman would develop functions designed for the prevention of conflicts among persons, organizations and entities linked to the development of mining project activities. This office would also develop activities to mediate, reconcile or facilitate problem-solving in controversies or conflicts regarding environmental or social issues.

Specific Objectives

- Avoid conflicts by rendering its services so that stakeholders can identify mutually satisfactory solutions.
- Promote environmental protection linked to mining project development.
- Encourage a balance among socio-economic development, the sustained use of natural resources, environmental protection and mining project sustainability.
- Identify potential problems related to environmental and social dimensions that are directly linked to the mining project.
- Promote benefits resulting from the implementation and execution of the mining project.

Type of Entity

The Ombudsman would be dedicated to the collection of data, such as facts, opinions and attitudes in the area of influence of the mine, that are relevant throughout the project cycle. In addition to gathering data and analyzing it intelligently, conclusions would be sent to the different parties involved for their assessment, to correct situations, modify and/or change the course of action, and strike a harmonious balance between the mining project and environmental and social issues and avoid conflict occurrence. In addition, this type of entity would be devoted to the mediation and conciliation of environmental and social conflicts through the pursuit of proposals and action plans, which may entail alternative compensation mechanisms to be negotiated with the stakeholders involved in the mining project.

Operational Capacity

For preventive actions, the proposed entity must operate in a clear, proactive way and be constantly trying to stay ahead of actions and events. The entity may also carry out diagnosis and predictions to avoid crisis and conflicts through exploratory fieldwork.

For conciliatory actions, the Ombudsman Office must operate in a distinctly reactive manner, constantly trying to establish contacts and commitments to mobilize all possible resources that can be used in the mediation and conciliation process for both environmental and social issues.

In all cases, the Ombudsman's Office is expected to act with autonomy, independence, transparency and neutrality. It should act in an equitable way vis-à-vis all government, private sector and social stakeholders.

Institutional Organization and Modus Operandi

The Ombudsman's Office would consist of a central headquarters and regional branches with field teams. It would operate in the areas of conflict prevention and conflict resolution regarding both environmental and social issues. These two areas would be managed by an environmental manager and a social manager (see organizational chart below).

Functional Structure and Roles

The proposed entity would be a very flexible organization, able to operate quickly and resolutely to apply its efforts to resolving difficulties and challenges that might arise in the future.

Lima should be considered the headquarters. Local team branches should also be implemented according to the area of influence of the main projects. The headquarters is not only the official location of the Ombudsman, but also the site of the two managers and the administrative and

back-up personnel. The headquarters must be a neutral mediation and conciliation space for major conflicts and a virtual documentation center.

The local branches are institutional points of reference to receive and file documents, log complaints and accusations and retain all types of information that could be useful. In addition, they would function as neutral spaces for mediation and conciliation of lesser conflicts.

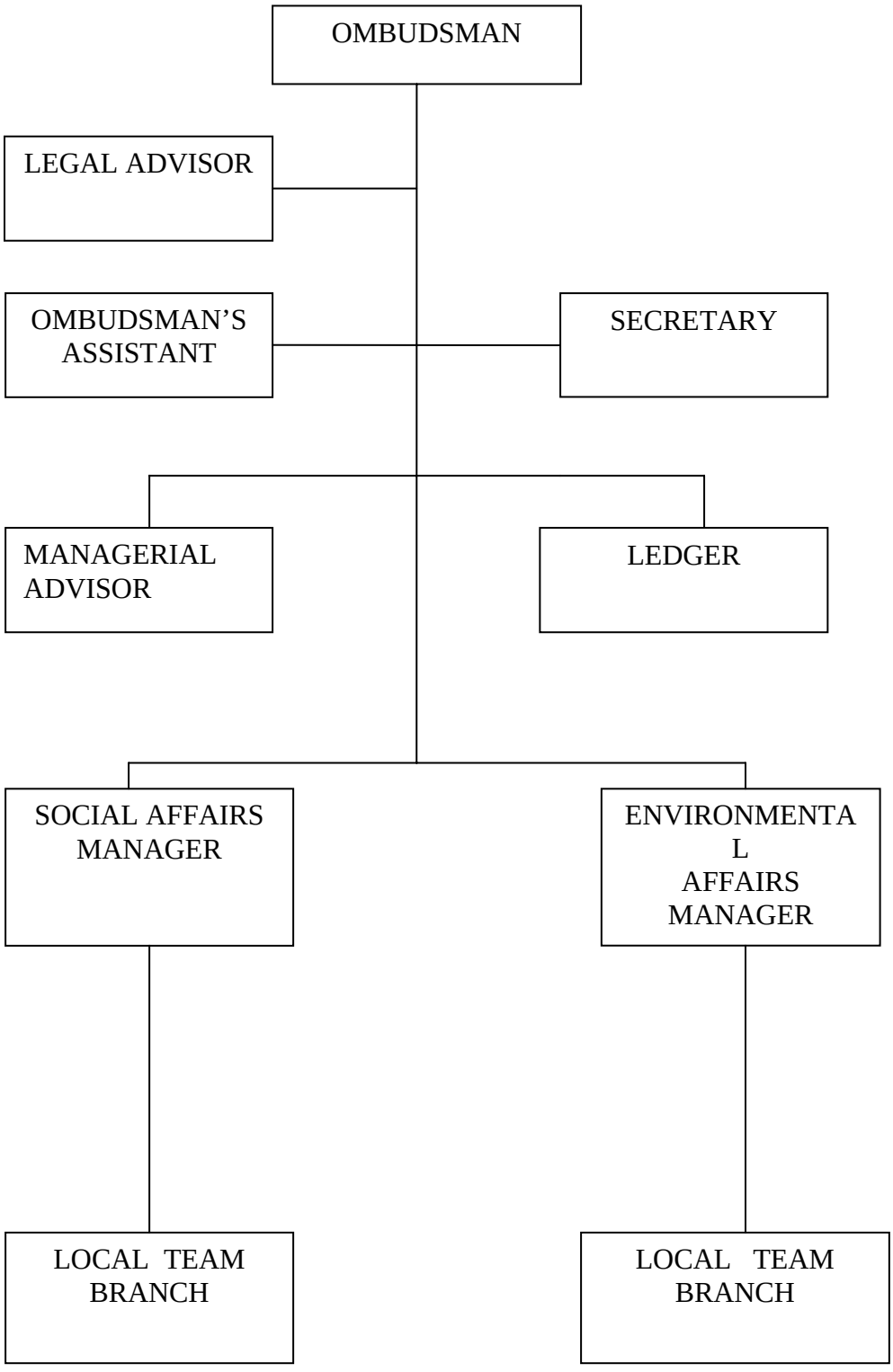
All permanent staff recruited by the Ombudsman's Office shall be hired under a private system. The Ombudsman and managers must be senior, experienced personnel and they must be able to act with autonomy, independence, transparency and neutrality.

The Ombudsman's role must be focused on:

- planning and opening of the Office;
- planning operation and intervention strategies, programs and policies accounting preparation, execution and management of operational budgets;
- preparing and disseminating the Ombudsman materials;
- signing agreements and representing the Ombudsman's Office;
- organizing work with the two managers;
- prioritizing conflict resolution;
- conducting mediation activities; and
- leading conciliatory processes.

The role of the two managers is characterized by frequent fieldwork. Their work must be in direct contact with the areas and stakeholders of mining projects and supported by the respective local team branch.

Diagram 9. Proposed Ombudsman's Office Organizational Chart



APPENDIX 13: ADDITIONAL INFORMATION ON MINING TAX PROCEEDS

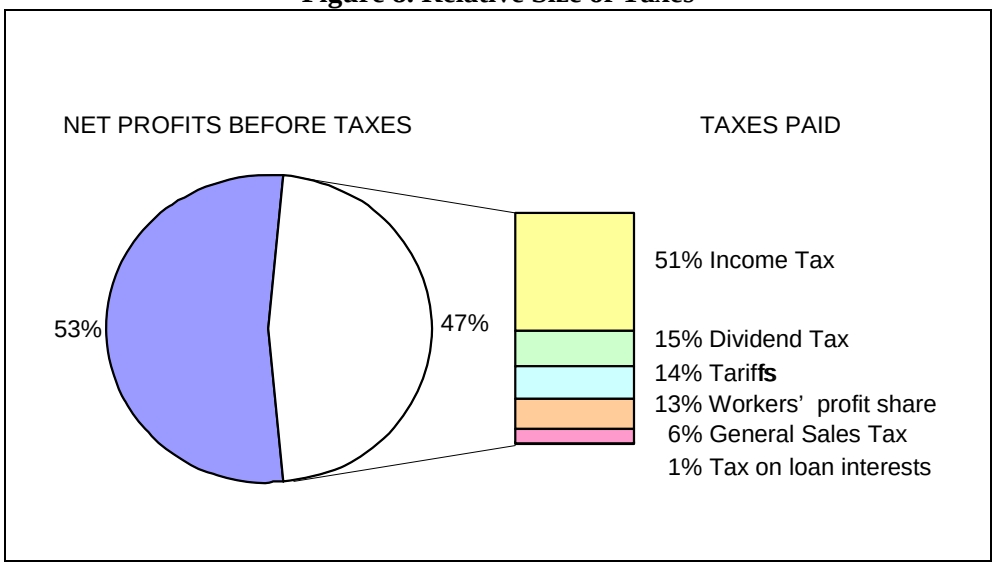
Table 29. Summary – Peruvian Mining SectorTax Burden

Tax	Rate or required amount	Description
Income tax	30% +2 Current Regime, or 27% + 2% (2001) with tax stability agreement	Tax base: net profits. Firms have several deductions.
Dividend tax	4.1%	It applies to profits delivered
Payroll taxes	9% ESSALUD (Social Security state entity), plus 2% solidarity tax 0.75% contribution to SENATI – (National Institution of Technical Education)	On paid wages. Contribution to SENATI applies if the firm has 20 or more employees.
Foreign consultancy services tax	24% if services are delivered entirely in Peru, or 12% if a portion of the services are delivered out of the country. [has recently changed]	The tax applies to payment made for consultancy services.
Workers´ profit share	8%	On net profit of the firm.
Import taxes	Between 5 and 7% for equipment imports.	
Withholding tax on loan interest	4.99% if lender is a foreign institution 30% between firms	Rate applies to loan interest
General Sales Tax	19% for purchase of goods and services.	Rate applied to sale price.
Local Taxes	Property Tax	If concession is located in urban area
Derechos de Vigencia	$3 per ha of the mining concession	Annual payment
Royalties	Percentage of net sales	Enabling legislation in force.

C. Casas (2004)

An important indicator for a more in-depth analysis of the tax system in the mining sector is the effective rate of taxes. This rate is considered to be similar to a ratio of the value of the total amount of taxes paid by the enterprise and the net value of their profits before taxes. An estimate of this rate in the case of a copper mine in Peru was calculated by Otto J. (2002), and the findings can be observed in the following graph.

Figure 8. Relative Size of Taxes



Source: Otto J. & C. Casas (2004) [180]

(p.8)

However, the MEF depends on a series of other entities to provide the necessary inputs for this calculation. The institution in charge of tax collection and, therefore, the one that provides the base for the canon, is SUNAT (national tax collection authority). However, since the information that SUNAT uses is not public, it is not legal to disclose how this amount is calculated.

Moreover, despite the fact that many of the mining enterprises are publicly owned and publish their financial statements each year, it is complicated to calculate the exact amount that each one should pay in income tax. Private companies usually only use the accounting system imposed by the tax agencies to calculate the taxes they have to pay, but the financial statements that they present to stakeholders – the ones published - differ from the ones used to calculate taxes since the government uses particular rules for key features linked to the calculation of profits – like depreciation rates and the treatment of poor sales- and recognizes only part of the documentation that the firms present. An additional problem is generated by the previously mentioned tax stability arrangements. These arrangements generate differences in tax regimes, tax rates and deductions not only between mining companies, but between their different mining projects. Currently, 16 mining enterprises hold tax stability arrangements with the Government in 21 different mining units. The arrangements have different time maturities that go from one to seventeen years.

Figure 9. Mining Firms with Tax Stability Arrangements

Mining Companies	Mining Unit	End Year
DOE RUN Perú	Cobriza	2021
BHP Billiton Tintaya	Planta Industrial de Óxidos	2018
Minera Yanacocha SRL	La Quinua	2018
CIAMinera Antamina S.A	Antamina	2015
CIAMinera Sipan SAC	Sipan	2014
Minera Yanacocha SRL	Cerro Yanacocha	2014
CIAMinera Milpo	Milpo 1	2013
Sociedad Minera Cerro Verde	Cerro Verde 1,2,3	2013
Minera Barrick Misquichilca SA	Pierina	2012
Minera Yanacocha SRL	Maqui Maqui	2011
Southern Peru Copper Corporation Sucursal Perú	Planta LIXIV- SX/EV- Toquepalca	2010
BHP Billiton Tintaya	Tintaya	2009
Minera Yanacocha SRL	Carachugo	2009
CIAMinera Ares SAC	Ares	2008
Empresa Minera del Centro del Perú SA	Morococha	2006
Empresa Minera los Quenuales SA	Casapalca	2006
Empresa Minera los Quenuales SA	IscayCruz	2006
Sociedad Minera Corona SA	Yauricocha	2006
Volcán Compañía Minera SAA	Cerro de Pasco	2006
Volcán Compañía Minera SAA	San Cristóbal	2006
CIAMinera Condestable SA	Condestable	2005
Consorcio Minero Horizonte SA	Parcoy de Trujillo	2004

Source – CAD – ***El Canon Minero en el Perú***

Table 30. Mining Royalties in some countries of Latin America

Country	Royalties
Peru	Recently approved royalties act.
Argentina	There is a maximum charge of 3% of the value of the extracted mineral.
Bolivia	Royalties are charged according to the metal. For example, in the case of gold, it depends on its price in London. Lower than 400$/oz - Royalty 1% Between 400 and 700$/oz - Royalty 4% Higher than 700 $/ oz – Royalty 7%
Brazil	Paid according to the mineral. Up to 3% of the billed net value: Aluminum 3% Gold and Iron 1% Other mineral substances 2%
Chile	No royalties are charged (although law has not yet been passed)
Ecuador	Applicable to all metals 3% of gross production. (For products to be sold abroad, their value is a function of international market prices)
Colombia	Progressive or fixed rates according to contract. No less than 0.4% of the value.
Venezuela	Applicable to all metals. 3% of commercial value The government can agree with the holder to reduce the royalty tax by up to 1%.

Source: CEPAL 2002

APPENDIX 14. EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE (EITI)[181]

The EITI was launched by the British Prime Minister, Tony Blair, at the World Summit on Sustainable Development, in September 2002, with the objective of increasing transparency over payments and revenues in the extractive sector in countries heavily dependent on these resources. The Department for International Development has led the development of the initiative since then. The initiative encourages governments, publicly traded, private and state-owned extractive companies, international organizations, NGOs and others with an interest in the sector to work together voluntarily to develop a framework to promote transparency of payments and revenues.

The Initiative is grounded in a shared belief that the prudent use of natural resource wealth has the potential to provide the basis for sustainable economic growth and development. At Evian, the G-8 countries emphasized their determination to fight corruption, one of the key obstacles to economic and social development, and mismanagement of public revenues and expenditure. They agreed on an action plan that includes piloting, on a voluntary basis, an intensified approach to transparency in countries where revenues from extractive industries (oil, gas and mining) are important. The EITI will help develop concrete measures to implement this plan. Since the launch in September 2002, the Initiative has been developed by a multi-stakeholder group, including governments, oil, gas and mining companies, industry bodies, international institutions, investors and NGOs. It has been informed by broader anti-corruption and transparency policy discussions in the G8.

The EITI principles are:

- Prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.
- Management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments, to be exercised in the interests of their national development.
- The benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
- Public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
- It is important to achieve transparency by governments and companies in the extractive industries and to enhance public financial management and accountability.
- Achievement of greater transparency must be set in the context of respect for contracts and laws.
- Financial transparency will generate an enhanced environment for domestic and foreign direct investment.
- In principle and practice, governments must be accountable to all citizens for the stewardship of revenue streams and public expenditure.
- There must be commitment to encouraging high standards of transparency and accountability in public life, government operations and in business.
- A broadly consistent and workable approach to the disclosure of payments and revenues is required, in a manner that is simple to undertake and to use.

[181] "Extractive Industries Transparency Initiative (EITI)". London conference, 17 June 2003. http://www.eitransparency.org

- Payments disclosure in a given country should involve all extractive industry companies operating in that country.
- In seeking solutions, all stakeholders have important and relevant contributions to make - including governments and their agencies, extractive industry companies, service companies, multilateral organizations, financial organizations, investors and non-governmental organizations.

Participants will work actively to support the objective of the EITI and actions that are consistent with each participant's individual functions and objectives. These will include:

- Developing and testing methods of payment and revenue disclosure and publication in the extractive industries in countries heavily dependent on natural resources, wherever the government has decided to do so;
- Working at the country level to implement reporting guidelines consistent with EITI principles, agreed between each host government and companies working in its country, along with support from civil society, international institutions and other relevant players. In piloting this approach, the EITI reporting guidelines will provide the basis for country-level procedures to ensure transparency in company payments and government revenue;
- Developing effective links to other initiatives and actions designed to tackle corruption and improve transparency;
- Incorporating the principles of EITI into relevant, guidelines or operational policies, wherever appropriate;
- Mobilizing, where appropriate, technical advice, expertise and support for capacity building to help stakeholders implement and review the EITI;
- Considering in what other ways the objectives of the Initiative may be pursued;
- Encouraging, whenever appropriate, companies, governments, and other interested parties to join the Initiative to develop effective and lasting solutions; and keeping progress of the Initiative under regular review.

APPENDIX 15. THE GLOBAL REPORTING INITIATIVE

The Global Reporting Initiative (GRI) was convened in 1997 by the Coalition for Environmentally Responsible Economies (CERES) in partnership with the United Nations Environment Programme (UNEP). It was established to elevate sustainability reporting practices to a level equivalent to those of financial reporting, while achieving comparability, credibility, rigor, timeliness, and verifiability of reported information. GRI has undertaken this work with the active participation of corporations, environmental and social NGOs, accountancy organizations, trade unions, investors, and other stakeholders worldwide.

GRI released an exposure draft Sustainability Reporting Guidelines ("*Guidelines*") in 1999. After an exhaustive period of drafting, pilot testing, and further consultation, GRI released the first version of its *Guidelines* in June 2000. The 2002 version of the *Guidelines* marks the continuation of a cycle of testing, review, consultation, and revision of both the *Guidelines* and supporting documents. Future revision cycles will remain rooted in the principles GRI has embodied since its inception: inclusiveness, balance, transparency, and technical excellence.

The Global Reporting Initiative (GRI) is a long-term, multi-stakeholder, international process whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines ("*Guidelines*"). These *Guidelines* are for voluntary use by organizations for reporting on the economic, environmental, and social dimensions of their activities, products, and services. The aim of the *Guidelines* is to assist reporting organizations and their stakeholders in articulating and understanding contributions of the reporting organizations to sustainable development. Since publication of the first *Guidelines* in June 2000, the trends that catalyzed the formation of GRI have continued unabated and, in most cases, have intensified. The issues—globalization and corporate governance, accountability, and citizenship—have now moved to the mainstream of policy and management debates in many organizations and the countries in which they operate. The turbulent first years of the 21st century underscore the reason for GRI's rapid expansion: higher standards of accountability and increasing dependence on wide-ranging external multi-stakeholder networks will form a significant part of the fabric of organizational practice in the years to come.

Support for creating a new, generally accepted disclosure framework for sustainability reporting continues to grow among business, civil society, government, and labor stakeholders. GRI's rapid evolution in just a few years from a bold vision to a new permanent global institution reflects the imperative and the value that various constituencies assign to such a disclosure framework. The GRI process, rooted in inclusiveness, transparency, neutrality, and continual enhancement, has enabled GRI to give concrete expression to accountability.