A Double-Edged Sword?
Implications of Mining for Environmental Security in the Philippines

Foundation for Environmental Security and Sustainability

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FESS Foundation for Environmental Security & Sustainability

USAID FROM THE AMERICAN PEOPLE

The **Foundation for Environmental Security and Sustainability (FESS)** is a public policy organization established to advance knowledge and provide effective solutions to key environmental security concerns around the world. FESS conducts extensive field research in combination with data analysis to produce policy-oriented reports and recommendations that address environmental risks to stability.

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Cover photo: Save the Abra River Movement

Mine tailings spill into the Abra river, with houses on both sides of the tailings flow.

Acknowledgement

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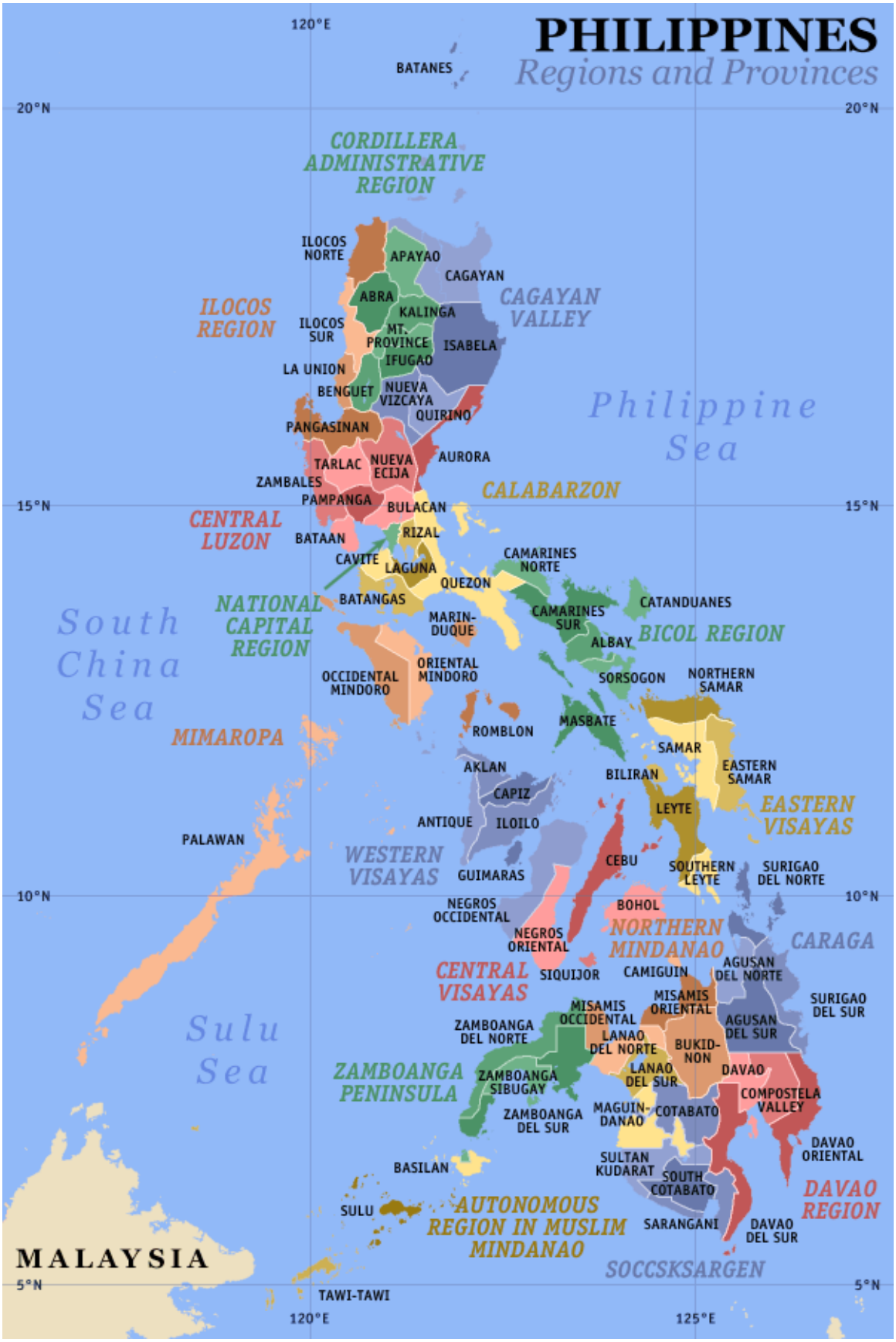

Source: http://en.wikipedia.org/wiki/Philippines.

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ACRONYMS

AFP	Armed Forces of the Philippines
ARMM	Autonomous Region in Muslim Mindanao
BFAR	Bureau of Fisheries and Aquatic Resources
BPEMM	Best Practice Environmental Management in Mining
CADC	Certificate of Ancestral Domain Claim
CADT	Certificate of Ancestral Domain Title
CAR	Cordillera Autonomous Region
CASM	Communities and Small-Scale Mining
CBCP	Catholic Bishops' Conference of the Philippines
CBNC	Coral Bay Nickel Corporation
CCC	Critical Country Concerns
DENR	Philippine Department of Environment and Natural Resources
EIU	Economist Intelligence Unit
EMB	Environmental Management Board
EPB	Environmental Performance Bond
EPICLI	Environmental Pollution, Impairment, and Clean-up Liability Insurance
ESAF	Environmental Security Assessment Framework
ESF	Environmental Security Factors
EITI	Extractive Industries Transparency Initiative
FESS	Foundation for Environmental Security and Sustainability
FMRDF	Final Mine Rehabilitation and/or Decommissioning Fund
FPIC	Free Prior and Informed Consent
FTAA	Financial or Technical Assistance Agreement
GDP	Gross Domestic Product
HUK	Hukbalahaps
ICMC	International Cyanide Management Code
IEC	Information, Education, and Communication
ISO	International Standards Organization
IP	Indigenous People
JUSMAG	Joint United States Military Advisory Group
LGU	Local Government Units
LPI	Lafayette Philippines Inc.
LRC-KSK	Legal Rights and Natural Resource Center (Kasama sa Kalikasan)
MAP	Minerals Action Plan
MGB	Mines and Geosciences Bureau
MILF	Moro Islamic Liberation Front
MOU	Memorandum of Understanding
NPA	New People's Army

RTNMC	Rio Tube Nickel Mining Corporation
SCAA	Special Citizen Active Auxiliary
SDMP	Social Development and Management Program
SSAI	Siocon Subanen Association Inc.
TIFA	Trade and Investment Framework Agreement
TVI	TVI Resource Development Inc.
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP MRF	United Nations Environment Programme Mineral Resources Forum
USAID	United States Agency for International Development
USG	Government of the United States
USTR	United States Trade Representative

I. INTRODUCTION

The Foundation for Environmental Security and Sustainability (FESS) is a public policy foundation established to advance knowledge and provide practical solutions for key environmental concerns that pose risks to national, regional, and global security. With Congressional support, and through a grant from the U.S. Agency for International Development (USAID), FESS developed the Environmental Security Assessment Framework (ESAF), a research methodology that combines a consistent, formalized analysis with extensive field research to construct policy-relevant recommendations that address potentially destabilizing environmental conditions.

In 2003, at USAID's request, FESS began a series of three country-level environmental security assessment pilot case studies. The first pilot study focuses on Nepal and was completed in the spring of 2004. The second case study, completed in the spring of 2005, analyzes environmental security in the Dominican Republic, while the third case study covers environmental security in Uganda and was published in June 2006. With the series of pilot case studies concluded, the Philippines is the subject of a fourth case study, the findings of which are reported herein. This latest case study was undertaken in collaboration with the Croft Institute for International Studies at the University of Mississippi.

The concepts of "environmental security" and "environmental insecurity" are relatively new, and there are a number of competing definitions and varying interpretations of the terms. In its work, FESS employs the following working definitions of environmental security and environmental insecurity:

- *Environmental security* is a condition in which a nation or region, through sound governance, capable management, and sustainable utilization of its natural resources and environment, takes effective steps toward creating social, economic, and political stability and ensuring the welfare of its population.

- *Environmental insecurity* is a condition in which a nation or region fails to effectively govern, manage, and utilize its natural resources and environment, resulting in social, economic, or political instability that over time may lead to heightened tensions, social turmoil, or conflict.

An environmental security assessment incorporates environmental and natural resource factors as key independent or intervening variables and security as the ultimate dependent variable in the analysis. The concept of security encompasses the individual (human security), community, nation, and region. Thus, the ESAF is not intended as a comprehensive study of one nation's environmental challenges but instead focuses mainly on the analysis of pathways by which environmental problems or the use or abuse of natural resources may threaten that nation's stability and security. Insecurity and instability in the Philippines has potential ramifications for U.S. interests and security in light of the country's strategic location and the strong bilateral relations between the Philippines and the United States.

Links among the environment, development, and security are complex but increasingly acknowledged by U.S. and other policymakers around the world. As former USAID Administrator Andrew Natsios pointed out, the *National Security Strategy of the United States of America* placed development "on a par with defense and diplomacy" as a "central component of national security strategy" (USAID 2005). In October 2003, the member states of the

Organization of American States reached agreement in Mexico City on the *Declaration on Security in the Americas*, which states that "the traditional [security] concept and approach must be expanded to encompass new and nontraditional threats, which include political, economic, social, health, and environmental aspects" (Organization of American States 2003). In February 2004, the African Union's *Solemn Declaration on a Common African Defence and Security Policy* stated that the "newer, multi-dimensional notion of security embraces such issues as … protection against natural disasters as well as ecological and environmental degradation" (African Union 2004). And, in declaring the ASEAN Environment Year 2003, Cambodian Prime Minister Hun Sen stated that, "Environmental interests span borders as well as generations. As such, environmental security is as important as economic and political security" (Sen 2003). These declarations and commitments have heightened the need to find ways to make concrete progress in assessing and mitigating problems of environmental security. Thus, better monitoring, analysis, and early warning of these emerging risks to security have become policy imperatives.

The linkages between environment and security are seldom linear or simple. Only in rare instances can environmental degradation or natural resource mismanagement be identified as the sole or principal cause of endemic insecurity and instability (Homer-Dixon 1999; Dabelko, Longergan, and Matthew 2000; Najam 2003). More frequently, environmental factors act upon—and are acted upon by—other variables related to security, such as governance, economic performance, and social relations. The interaction of such key environmental and non-environmental variables can have a powerful cumulative effect on security. Such reciprocal relationships are difficult to identify and measure and are thus frequently missed in multicausal analysis, especially since environmental security is a comparatively new paradigm.

An important asset of the environmental security paradigm is that it explicitly posits and analyzes such relationships. While purely environmental analyses often do not make linkages to livelihoods, social tensions, and insecurity, traditional security analyses can focus too exclusively on political and economic aspects of a conflict without exploring the use (or abuse) of natural resources or other environmental factors that may contribute to instability or insecurity. By addressing the origins and implications of environmental stresses and practices that place essential resources at risk—including deforestation, the misuse of mineral assets, soil degradation, and the destruction of marine and coastal resources—environmental security studies can provide policymakers with important insights into broader issues of stability and security.

In order to fulfill its promise, the field of environmental security, which to date has been marked by an overabundance of abstract discussions, must expand its empirical knowledge base through case studies in diverse locales. There is also a need for environmental security analysis to sharpen its ability to distinguish between those environmental or natural resource issues that *do* reach the threshold of having the potential to impact security and those that *do not* meet that threshold. Most importantly, insights from environmental security assessments need to be expressed in a form that policymakers can readily understand and take into account when making decisions.

This case study assessing environmental security in the mining sector of the Philippines is intended to contribute to meeting the challenge posed by the need to complement the theoretical foundations of environmental security with sound empirical data and clear policy relevance.

II. THE ESAF METHODOLOGY

The Environmental Security Assessment Framework seeks to answer questions concerning the implications of environmental variables for development, stability and, ultimately, security. The ESAF also is intended to provide consistency for comparisons across countries and regions, while being sufficiently adaptive to account for the nuances of local economic, political, social, cultural, and environmental conditions. The goal of the ESAF is to help facilitate the establishment of clear priorities and contribute to the development of effective and sustainable programs. (A detailed outline of the ESAF appears in Appendix I at the end of this report.)

The ESAF incorporates a diverse set of variables relevant to environmental security and natural resource management. These are examined in their interactions and analyzed in a series of successive phases leading to the formulation of scenarios and policy recommendations.

The ESAF makes use of various dimensions of stability and instability (e.g., social cohesion, livelihood security, political participation) as initial barometers of security conditions in a given country or region. Stability/instability is not conceived as a dichotomy but as a continuum, with instability becoming more acute and relevant to security as it moves through stages of heightened tensions, turmoil, and conflict. These stages may be nonlinear, temporary, or reversible; the diverse variables generated by the ESAF help to provide the context necessary to make such judgments. In certain situations (e.g., countries marked by authoritarian rule and poor environmental governance), *stability* itself might be associated with environmental security problems. The ESAF thus provides a thick description of the status and trends of environmental security through the use of layers of interrelated information to refine and contextualize understandings and distill hypotheses that lead to credible scenarios and actionable recommendations.

The ESAF proceeds in seven phases. *Phase I* of the ESAF sets out the initial profile of the country or region under study. The country profile includes baseline information about the politics, economics, social structure, history, and foreign relations of the country. The country profile is also the first stage in determining fault lines or cleavages that may be relevant to stability and security in a given nation or region. Specifically, the political analysis examines power distribution and key points of contention, the economic analysis looks into patterns of employment and the distribution of benefits from the current structure of production, and the social analysis looks at tensions associated with class, ethnicity, race, and religion.

Phase I also identifies U.S. interests in the country, and data on U.S. and international aid by organization and agency are collected. These data are essential in the final stages of the ESAF, when recommendations regarding assistance are considered in light of efforts already undertaken by the relevant governments and organizations.

Phases II and *III* situate environmental security within the context of natural resource-based economic activities, social conditions, and the physical environment. The two phases examine economic and social data linked to the environment in order to identify issues, sectors, and resources important to stability. *Critical Country Concerns* (CCCs) is the term used to refer to those factors identified as relevant to security.

Phase II proceeds from the premise that environmental security is grounded in tangible linkages between social and economic conditions and the environment. This phase, therefore: a) examines a country's critical natural resources using two sets of economic and social data linked to the

environment; and b) utilizes a third set of indicators to frame the foregoing analysis within the overall concept of environmental sustainability.

The information collected on environmental sustainability provides a profile of the natural setting and environmental trends within which socioeconomic activities take place. It includes measures of land under cultivation, rates of deforestation, and available water resources. Phase II's econo-environmental analysis determines significant sectoral contributors (e.g., agriculture, timber, mining) to GDP, the relationship between employment and the environment, and the structure of trade derived from environmentally based goods. The socio-environmental analysis centers on livelihoods, food security, and health, bringing into focus such relationships as those between population density and migration, staple crops and nutrition, and sanitation and disease.

Through these analyses, a clearer view emerges of key socioeconomic sectors (i.e., those important for stability) and their linkages to the environment in the form of underlying Critical Country Concerns. CCCs are defined as underlying issues, sectors, or resources that are directly or indirectly related to stability as a result of their importance for economic, political, and social well-being.

Phase III begins by identifying these CCCs from the previous analysis and explaining their links to the environment. Through further analysis, the relative condition and vulnerability of each CCC is investigated, thereby identifying a set of key environmental problems for the specific country or region under study. To understand the scope and underlying factors associated with these key problems, each is then disaggregated and studied more closely by examining the impact of *environmental governance* on the CCCs. *Environmental governance* is defined as the traditions and institutions by which power, responsibility, and authority are exercised over a nation's natural resources.

The environmental governance analysis considers how relevant populations and communities behave in response to traditions and institutions of power. Here, questions are considered about the structure and adequacy of legal and regulatory frameworks and the political will and capacity to enforce them. This phase also recognizes the increasing significance of civil society participation within a democratic context, and questions are asked about citizen access to public institutions where they can air grievances about the responsiveness and integrity of the institutions and officials responsible for environmental governance.

Phase IV takes as its point of departure the preceding assessment of the relative condition and vulnerability of the CCCs and goes on to develop a more finely tuned basis for assessing their implications and for distinguishing between environmental problems and problems of environmental security (as not all environmental problems are problems of environmental security). At this point, a preliminary judgment is rendered about which problems are to be identified as *Environmental Security Factors* (ESF).

ESFs are defined as those problems that have significant implications for political, economic, and social stability *and* may pose a security concern. This judgment is based upon the various sources and layers of information and analysis collected to this point in the ESAF, and the results are presented schematically in the ESF Profile, which makes this judgment apparent by laying out the entire list of key environmental problems under consideration. At this point, after first expanding the scope and complexity of the analysis in order to encompass all potential issues and then distilling the results through a process of differentiation that identifies those factors that are in fact relevant to security (the ESFs), the ESAF has significantly sharpened the power and focus

of the overall environmental security analysis. Based on these steps, the understanding of the relative significance of the ESFs is further refined.

Phase V is the stage at which the ESAF is ready to generate preliminary hypotheses. Through both the collected data and the multifaceted contexts and assessments generated by the prior phases, three types of potential crisis scenarios are developed in relation to the ESFs. One scenario projects likely outcomes if current trends continue in a linear fashion; the second posits shocks to the system and projects likely outcomes given the present capacity to respond; the third describes potential outcomes if the country were to take most of the steps necessary to address identified environmental security threats. Each scenario is evaluated in terms of its probability and potential impact.

Phase VI sets out the relevance of the ESAF findings to U.S. interests and the implications for assistance activities in the country or region examined. Field interviews with U.S. government officials supplement baseline data collected in Phase I as well as other information gathered in the previous stages of the research. The results are then compared and contrasted to the potential scenarios generated by the ESAF to identify gaps and target areas for improved U.S. coordination and assistance. This phase concludes with a set of preliminary recommendations.

Phase VII is the culmination of the ESAF bringing together all of the previous findings and providing a comprehensive assessment of the principal environmental security threats and possible remedial actions. The ultimate product is the comprehensive final report that follows detailing the findings and recommendations of the study. The recommendations put forth in the final report are comprehensive insofar as they address a wide range of possible actions available not only to U.S. and foreign policymakers but also to stakeholders in civil society and the private sector.

In sum, the ESAF generates practical policy recommendations for the use of government officials and other stakeholders, with a view toward promoting economic well-being, social peace, political stability, and environmental sustainability in the countries and regions it examines.

The Field Study

The ESAF assessment team was composed of researchers from both FESS (Jeffrey Stark, director of research and studies; Jennifer Li, research associate; Yossina Hurgobin, research assistant) and the Croft Institute for International Studies at the University of Mississippi (Michael Metcalf, executive director; Katsuaki Terasawa, senior fellow). In the Philippines, research assistance was also provided by Norberto Villar and Mary Ann Luz. In October 2005, the research team met with 83 elected officials, civil servants, military personnel, policy experts, academics, civil society professionals, and private sector representatives in Baguio, Cagayan de Oro, Capiz, Davao, Manila, Negros, and Palawan. The research team examined such issues as ethnic and political tensions; mining; land use, land rights, and agriculture; illegal logging; natural disasters; fisheries; tourism; water quality and sanitation; energy; and environmental health. Based on this first round of meetings, which brought to light a number of linkages between mining and potential conflict, the research team decided that the study would focus on mining as the most significant sector for the future of environmental security in the Philippines. (The reasons for this decision are discussed in detail in Section V below.)

In February 2006, the FESS-Croft team returned to visit mine sites and conduct interviews in Albay, Benguet, Manila, Palawan, Sorsogon, Surigao del Norte, and Zamboanga del Norte. Over the course of this second portion of the field study, the FESS-Croft team met with 75 government officials, civil servants, academics, Catholic clergy, civil society professionals, and private sector

representatives. At the conclusion of this field research trip, FESS staff presented preliminary findings to USAID mission staff. A complete list of those interviewed from both field research trips is attached in Appendix II.

Photo: Jeffrey Stark
Mayon Volcano, Province of Albay

III. U.S.-PHILIPPINES RELATIONS

For more than a century, the United States has had a close and influential relationship with the Republic of the Philippines. In 1898, as a result of the Spanish-American War (and the defeat of Spain's fleet in the Philippines), Spain ceded the Philippine islands to the United States. However, Filipinos who had been struggling for independence from Spain resented the imposition of U.S. rule. An insurrection ensued that lasted another three years in the northern islands and a decade beyond that in the Muslim area of Mindanao. Eventually, the rebellion fragmented and was reduced to occasional banditry. U.S. authorities established close collaboration with the *ilustrados*—upper class, well-educated Filipinos who were viewed as the leaders of a process of "maturation" that would culminate in Philippine independence. Although an elected Philippine assembly and senate were soon established in the years that followed, U.S. governor-generals essentially ran the country from 1901 to 1935. During that time, U.S. assistance focused on improving education, health, communications, and transportation infrastructure.

In 1935, the Philippines moved toward self-government as a commonwealth, but Japan invaded the country at the outset of World War II, and it came under Japanese control from 1942 to 1945. Many Filipinos, especially in the countryside, fiercely resisted the Japanese occupation. On July 4, 1946, a year after liberation by U.S. forces, the Philippines became an independent nation. In 1947, an agreement for the establishment of U.S. military bases was reached. The Joint United States Military Advisory Group (JUSMAG) was created to provide the government with military

instruction, training, and equipment in order to respond to the insurgency of the communist Hukbalahaps (HUKs) and other rebel groups. An amendment to the agreement in 1966 extended U.S. basing rights until 1991.

From the 1950s through the 1980s, the U.S. and the Philippines remained close strategic partners on security issues in East Asia, while at the same time deepening commercial and cultural ties. From 1965 to 1986, the country suffered through the increasingly authoritarian and corrupt rule of President Ferdinand Marcos. At the same time, the New People's Army, a Maoist rebel group, spread throughout much of the country. Marcos jailed his main political opponent, Benigno S. Aquino, Jr., for seven years on a fabricated murder charge. Aquino was released for heart treatment in the United States, where he remained for three years. When Aquino returned to the Philippines, despite his continuing jail sentence, he was assassinated descending the steps of his China Airways flight. Although Marcos denied involvement in the killing, public sentiment turned ever more sharply against him. Benigno Aquino's widow, Corazon Aquino, became the symbolic leader of what was now a highly mobilized opposition. In late 1985, Marcos claimed victory in a snap election, but outside observers agreed that this result had only been achieved by blatant and extensive fraud. Marcos's rule came to an end after massive public protests endorsed by the influential Catholic prelate, Cardinal Jaime Sin of Manila, caused the United States to withdraw its support.

During the tenure of his democratically elected successor, Corazon Aquino, public debate brought issues of sovereignty again to the fore, and the U.S. military bases of Clark Air Force Base and Subic Bay were closed by late 1992. During the 1990s, the administration of President Fidel Ramos had some success in negotiating with rebel groups and achieved greater economic and political stability, but by decade's end "People Power II" had removed yet another corrupt president, Joseph Estrada. Filipinos then looked to President Gloria Macapagal-Arroyo to restore rule of law and public trust in the office of the presidency.

U.S.-Philippines relations were renewed and strengthened after the attacks of September 11, 2001. For some time, the Philippine government had struggled to come to a cessation of hostilities with the Moro Islamic Liberation Front (MILF), a Muslim separatist group, and several terrorist attacks had been launched by Abu Sayyaf, a more radical splinter group with links to Al Qaeda. In this context, President Arroyo committed her government to a deepening of bilateral security cooperation with the United States, including Philippine support of military air, surface, and ground assets for counterterrorism. In 2005, the U.S. began funding for the Philippine Defense Reform, which includes not only strengthening operational capacity for counterterrorism but also enhancing the professionalization and reforming the conduct (especially in relation to human rights) of the Armed Forces of the Philippines (AFP). The latter is a particularly serious issue, as a number of international organizations, foreign governments, and civil society organizations have alleged that the AFP have been involved in scores of extra-judicial killings of activists and militants during the administration of President Arroyo (Amnesty International 2007; Hicks and Adams 2007; Independent Commission to Address Media and Activist Killings 2007; United Nations High Commissioner for Human Rights 2007; Khan 2006).

U.S.-Philippines relations also include extensive and important cultural, economic, and commercial linkages. The U.S. Census Bureau estimates there are some 2.8 million residents of Filipino origin living in the United States (U.S. Census Bureau 2005). In fact, over the past 20 years, the number of Philippine immigrants has been second only to the number of Mexican immigrants. The Central Bank of the Philippines estimates that remittances sent from the United States to the Philippines in 2006 totaled US$6.5 billion or 51 percent of all remittances received from overseas (Consulate General of the Philippines 2007). The U.S.–Philippines bilateral Trade

and Investment Framework Agreement (TIFA) was signed in 1989 to facilitate the deepening of commercial ties. Two-way trade between the U.S. and the Philippines now amounts to around US$16 billion annually, and the United States is both the main destination of exports (18 percent of total exports) and the main origin of imports (17.8 percent of total imports) for the Philippines (USTR 2006; *EIU* 2007a). While electronic goods make up the largest percentage of Philippine exports to the United States, the U.S. market also consumes 80 percent of Philippine exports of textiles and wearing apparel (USTR 2006).

IV. SEARCHING FOR STABILITY

The Philippines is marked by notable economic, social, and religious differentiation that complicates efforts toward national unity and social cohesion. These cleavages, in combination with certain cultural practices that have a strong influence on Filipino political life and business transactions, have a variety of potentially destabilizing implications.

Although the Philippines is generally considered a middle-income developing country—it ranks 84 out of 177 countries in the United Nation Development Programme's (UNDP) Human Development Index (United Nations Development Programme 2006)—it has a highly inequitable distribution of income (see Table 1). Families in the top decile have an income more than 20 times that of those in the bottom decile, and the aggregate income of the bottom 30 percent of families is only about 8.5 percent of total national income (National Statistics Office 2003).

Table 1
Percentage Distribution of Total Family Income, 2003

Income Decile	Family Income by Decile	Income Decile	Family Income by Decile
1st	1.8	6th	7.2
2nd	2.9	7th	9.1
3rd	3.8	8th	11.9
4th	4.7	9th	16.6
5th	5.8	10th	36.3

Source: National Statistics Office 2003.

At the same time, the highest levels of poverty are also concentrated geographically. According to data from 2000, of the eight poorest provinces in the country, five are in Mindanao (Sulu, Tawi-Tawi, Maguindanao, Lanao del Sur, Sultan Kudarat), two are in the Visayas (Masbate, Romblon), and one is in the Cordillera Autonomous Region or CAR (Ifugao). Four of the five poor provinces in Mindanao are in the part of the country with the strongest separatist sentiments, the Autonomous Region in Muslim Mindanao (ARMM). In 2000, all of these provinces had poverty rates of over 50 percent (see Table 2), while the national average was 39.5 percent, and only 11.5 percent in the National Capital Region (Schelzig 2005).

Table 2
Eight Poorest Provinces by Incidence of Poverty

Province	Incidence of Poverty (%)
Sulu (ARMM)	63.2
Masbate	62.8
Tawi-Tawi (ARMM)	56.5
Ifugao (CAR)	55.6
Romblon	55.2
Maguindanao (ARMM)	55.1
Lanao del Sur (ARMM)	55.0
Sultan Kudarat	54.3

Source: National Statistical Coordination Board 2003.

Within both the Muslim population in Mindanao and segments of the indigenous population throughout the islands—especially in the Cordillera Autonomous Region and Mindanao—there are longstanding grievances rooted in economic injustice and social marginalization. Indigenous people (IP) make up about 17 percent of the Philippine population, with about 33 percent of IPs in the CAR and 61 percent in Mindanao (Cordillera Peoples Alliance 2004). Ironically, given their high levels of poverty, many of the IP areas are rich in natural resources, especially mineral deposits. These dramatic disjunctures and dissonances—economic disparities, geographic inequalities, social marginalization, feelings of cultural disrespect, and widespread poverty amid natural abundance—all contribute to a powerful sense of relative deprivation and injustice among many groups in Philippine society.

Given the long duration of the Marcos dictatorship and the subsequent political upheavals and challenges to democracy (rumors of coups, attempted coups, and the removal of President Estrada by "people power") in the 20-year post-Marcos era, it is not surprising that these grievances are aggravated further by widespread mistrust of the political system. Indeed, there is a generally accepted view, expressed countless times by our informants, that the state (most notably, the central government) is permeated by a culture of corruption that works to the benefit of the privileged, hampering any meaningful relationship between officials in "imperial Manila" and citizens around the country. These public perceptions concerning corruption are reinforced by other sources, such as the corruption index of Transparency International, whose latest rankings place the Philippines at 121 of 160 countries surveyed (Transparency International 2006).

One of the most frequently noted characteristics of Philippine culture and society is the solidarity and the strong bonds not just among family members but also within networks of fictional kinship, including classmates or members of other social cohorts or organizations. This is true as well of the relations created through *compadrazgo* (godparenthood). All of these social practices link people in dense webs of interpersonal relationships. These social networks are animated by and gain power through the deeply held Filipino value of *utang na loob* or debt of gratitude, which imbues interpersonal relations with an embedded sense of reciprocal obligation. These obligations are not tit-for-tat or single-event exchanges but a lasting and diffuse commitment to one's family and social counterparts. While this implicitly understood system of shared obligation has clear benefits for society, in a country of highly concentrated economic, social, and political power, it also has the potential to contribute to cronyism, nepotism, and the dispensing of special favors. Hence, personal relations, business, and politics in the Philippines (largely controlled by the same social networks) are closely linked and marked by licit and illicit deal

making, payoffs, kickbacks, regulatory evasions, and other mechanisms for profit and enrichment. This extends to the granting of concessions, waivers of law, and myriad other "discretionary" decisions made by government officials with regard to the exploitation of natural resources.

The Arroyo Administration: From Hope to Renewed Instability

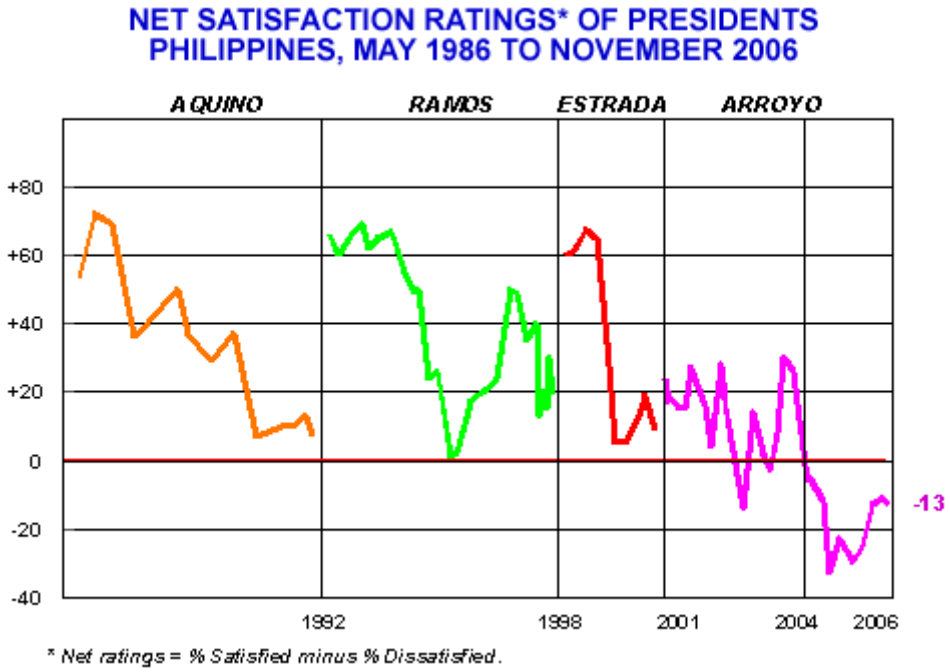
In January 2001, after the Supreme Court unanimously ruled that as vice president Gloria Macapagal-Arroyo could lawfully assume the presidency after the departure from the presidential palace of Joseph Estrada, she faced the twin challenges of restoring political and economic stability (*EIU* 2001). For much of her first term, she was able to make steady incremental progress, as reflected in "net satisfaction ratings" (the number of satisfied respondents minus dissatisfied respondents) of her performance of near +20 percent as measured by Social Weather Station polls (see Chart 1). She was especially effective in economic policy, constraining spending and reducing the budget deficit from 6.5 percent to 4.2 percent (*EIU* 2004).

However, her political decisions and conduct became the source of considerable public discontent. First, after announcing publicly in December 2002 that she would not run for the presidency in the next election in order to set aside political considerations and govern in the best interest of the country, she reversed her position and became a candidate. More serious than this turnabout, however, were allegations of vote rigging that were made against her in the wake of her subsequent victory in the May 2004 elections. A tape recording made before the election captured a conversation between Arroyo and an official of the Commission on Elections in which she discussed her margin of victory. This scandal was compounded by other stories that alleged that members of her family had been involved in corruption.

Pressure mounted for Arroyo to leave office as ten senior members of her government resigned in protest, and a street rally of some 100,000 people sought to create the conditions for "People Power III." However, in a key meeting, the Catholic bishops—always highly influential in politics in the Philippines—chose not to reprise their role in ousting a president. Former president Fidel Ramos lent his support to Mrs. Arroyo as well. Two votes in the House of Representatives to move toward impeachment failed. As a consequence, President Arroyo was able to continue to govern, although she made concessions to key political figures whose plans included constitutional reforms that might shorten her term of office. In 2004 and 2005, her net satisfaction ratings dipped to -30 percent, and although they recovered somewhat in later months, they remained strongly negative, leaving the political future of the country uncertain and on shaky terrain (see Chart 1).

Thus, the Philippines currently is subject to both embedded or structural instabilities (e.g., poverty and inequality, concentration of political and economic power, ethnic grievances) and more immediate disequilibria (the political precariousness and uncertain future of the Arroyo administration). It was in this context that the FESS-Croft research team began its environmental security assessment of the Philippines.

Chart 1



Source: Social Weather Stations 2005.

V. FINDINGS

Why Mining?

After conducting an initial round of interviews, the FESS-Croft research team decided to focus its environmental security assessment on the mining sector. In part, this was for a practical reason. In May 2004, USAID organized and co-sponsored with the Philippine Department of Environment and Natural Resources (DENR), a workshop on "Natural Resource-Based Conflicts in the Philippines: Trends, Challenges, and Actions." Seventy-five participants from NGOs, national and local governments, donors, private sector, and academia reviewed case studies of conflicts over natural resources in the Philippines and elsewhere in Asia, discussed mitigation tools, and identified priority actions. However, this workshop addressed only conflicts over dwindling supplies of forests, fish, and water. Given the conflictive history of mining in the Philippines, the mining sector was an obvious gap to be filled and worthy of greater attention.

Preliminary discussions and interviews generated other compelling factors that sharpened the focus on mining. First, it became clear that the administration of President Arroyo had made a decision to aggressively promote and "fast track" mining in a way that was likely to place unprecedented pressures on regulatory and oversight mechanisms of the mining sector. Although they could not be verified, statements from informants indicated that the December 2004 Supreme Court decision to allow 100 percent foreign investment in mining projects—a hotly debated and, for some, long awaited outcome—had been the result of political pressure. Certainly, it was apparent from statements from government officials that the revitalization of the mining sector through a massive surge in foreign investment was seen as a key element of the overall strategy for economic growth, debt reduction, job growth, and enhanced tax revenues.

Indeed, only a month later, DENR Secretary Michael Defensor traveled to China to court investments, just one stop on a "mining roadshow" in which he noted that the government had identified 23 priority mining areas that were projected to bring in US$6 billion within the next six years (Mines and Geosciences Bureau n.d.b). In a speech in Singapore in March 2005, Defensor further elaborated the expected benefits from the newly opened mining sector:

> The Philippine government is, thus, expecting around US$6.5 billion in foreign direct investments with an annual sales/foreign exchange of US$3.4 billion. Annual excise tax from these projects is estimated to be US$61.4 million with annual corporate income tax of US$432 million. Above all, an estimated 200,000 direct and indirect employment would be generated. For the job multiplier effect alone of 10 allied jobs per mining job created, around 2 million jobs will be generated by these 23 mining projects (Defensor 2005).

It was not possible in our interviews to ascertain the basis for these figures and very large claims, but they were widely perceived among interviewees as highly inflated at best. In our interviews, it was clear that Secretary Defensor was perceived by many as having assumed the role of chief promoter of mining projects in the country, an incongruous position for the public official most responsible for environmental protection and stewardship of the nation's natural patrimony. The Secretary himself had noted, in his Singapore speech, that "…of the many sectors the DENR has in its mandate, only mining has been explicitly included in President Gloria Macapagal-Arroyo's Ten-Point Program of Government." Although he remarked that, "…the government is aware that a large part of the population has some apprehensions, even strong opposition" to mining, and that there was also a "…terrible side that mining has imprinted on the minds of the Filipino people," he also referred, somewhat oddly, to its "glorious past" (Defensor 2005).

During the first field research trip, team members were able to hold a 90-minute discussion with Secretary Defensor and his undersecretaries. In that discussion, he reaffirmed at length his projections about the expected economic benefits to be realized from a surge in mining investments. At the same time, he expressed his awareness of the environmental and social concerns associated with new mining projects, and he confirmed his commitment to a new era of "responsible mining" through enforcement of all provisions and regulations applicable by law to the conduct of mining companies during all phases of their operations. However, at points his comments raised concerns about the effectiveness of policy implementation. In particular, there was a lack of clarity about how DENR handled the question of Free Prior and Informed Consent (FPIC), which is the mandated process by which indigenous people do or do not give their consent to projects of natural resource exploitation. Secretary Defensor stated that the process was "very difficult," and that it was hard to assess when consensus had been reached by the community. He then went on to say that he exercised his own discretion if satisfied that FPIC had been fulfilled.

A second area of concern that emerged from interviews was that virtually all interviewees viewed DENR as a weak ministry that—notwithstanding the very comprehensive and up-to-date environmental laws on the books—had a very poor record of regulatory enforcement and implementation. Many of those with whom we met believed that DENR's enforcement capacity inevitably would fall far short of that required by any significant expansion of the mining sector. DENR also was regarded as highly susceptible to corruption, with the issuing of licenses, concessions, and legal waivers often decided according to political criteria or economic gain rather than legal standards. Surveys of public opinion again confirmed what we heard in interviews. In a poll conducted by the Social Weather Stations in 2005 on "net sincerity ratings of government agencies in fighting corruption," respondents rated DENR in the "bad" category,

placing it 22nd out of 26 institutions ranked (Social Weather Stations 2005). Moreover, many of our interviewees regarded information or statements issued by DENR as often untrustworthy and lacking credibility. Overall, it was clear that DENR suffered from a marked lack of public trust.

A third factor that focused our attention on mining and conflict was the role of the Catholic bishops and their influence on both public perceptions and national politics. During the first portion of the field study, the FESS-Croft team met with Cardinal (then Archbishop) Gaudencio Rosales. Given Cardinal Rosales's dramatic experiences fighting illegal logging in Bukidnon in the 1980s, it was no surprise that he had strong views about the corrupting influences of powerful political and economic interests and the infamously poor record of natural resource management in the Philippines. The depth of his skepticism about the possibility of moving toward a new era of "responsible mining" was striking, however. When the idea was raised of the creation of a multistakeholder "Mining Council" to serve as a credible voice on mining issues, he indicated that although he endorsed the concept he held out little hope for such a body having any real influence or prospects for success.

Fourth, we encountered very entrenched and active anti-mining positions in discussions with civil society organizations working on IP issues in the Baguio area. There is a long history of conflict over the environmental and social effects of mining in that region and, if anything, the government's announced plans for a new wave of mining projects seemed to inflame already existing resentments. These viewpoints were entwined with activist political agendas, sometimes with a significant ideological content, that in our view contributed at times to exaggerations or misstatements of facts. (For example, we found the call for a total ban on foreign companies misguided, since the evidence seemed to indicate that foreign firms were more likely than domestic companies to devote the necessary resources and expertise to environmental protection.) Nevertheless, the passions of the region are based on very real grievances. Mining companies in indigenous communities in the six provinces of the Cordillera Autonomous Region have fouled rivers, endangered the environmental health of communities, and mistreated workers. Indigenous people in this region also are highly sensitive to the issue of extra-judicial killings that have taken place and are widely presumed to have been committed by military or security forces. The presence of the New People's Army (NPA) in the region adds to the potential for conflict, with disputes over mining-related issues a highly plausible trigger of such clashes.

During the first phase of field research, visits in Mindanao to areas in and around Cagayan de Oro and Davao found a mix of similar (but less passionate) anti-mining sentiments and skeptical but not entirely close-minded perspectives about new mining projects. This mix of viewpoints extended to both Muslim and non-Muslim interviewees. Here, the hope for economic development leavened somewhat deep skepticism about the conduct of mining companies. Sharper clashes of opinion about mining were to come later in the FESS-Croft team's second visit to Mindanao.

Photo: Mary Ann Luz
FESS-Croft Team at the Cordillera Peoples Alliance in Baguio

A Highly Conflict-Prone Resource Sector

Overall, the first phase of research indicated that, for a variety of reasons, the mining sector in the Philippines has a high potential for conflict.

Despite past mining accidents, environmental damage, and associated social conflicts, President Arroyo's government saw mineral extraction as one of the principal means to spur economic growth, reduce the debt load, and generate employment. With DENR Secretary Michael Defensor playing a key role, the government launched an aggressive promotional campaign to spur foreign investment in mining projects all across the country. Although very few examples or specifics were cited, the new mining projects were supposed to follow a new and improved model of "responsible mining" that would avoid accidents and benefit communities. Because of the very negative track records of both the mining industry and DENR, many Filipinos, especially indigenous people, were highly skeptical of or rejected outright these claims. For indigenous people and many in Mindanao, the government's new push on mining rekindled resentments about predatory resource exploitation that brought few benefits but a host of environmental insults. Cardinal Rosales and a significant number of the Catholic bishops were against the further opening of the mining sector. Some were against mining altogether. In the context of the swapping of favors for political and economic advantage among officeholders and businesspersons, the sudden opening of a significant sector of the national patrimony to what might be a rapid-fire granting of concessions, licenses, and legal waivers raised the possibility of an increase (rather than the advertised decrease) in mining accidents and related problems.

Each of these factors was significant in its own right, but in fact they actually tended to interact, thereby increasing the potential for conflict. If mining accidents occurred, they might be followed by protests that eroded investor confidence. The positions adopted by the Catholic bishops on mining also would have political consequences for the president. If the sector were to be perceived by rebel groups as an Achilles heel for the government, it might embolden them to sabotage operations. Indigenous protests or the actions of activists might impel extreme elements

in the security forces to commit extra-judicial killings—a turn of events that could provoke its own response.

For all these reasons, the FESS-Croft team decided to make the mining sector the focus of its environmental security assessment. For the second phase of field research, the team returned to continue a series of multistakeholder interviews, gain a better understanding of the recent past in the mining sector, and focus on mine site visits and conversations with company officials and affected communities.

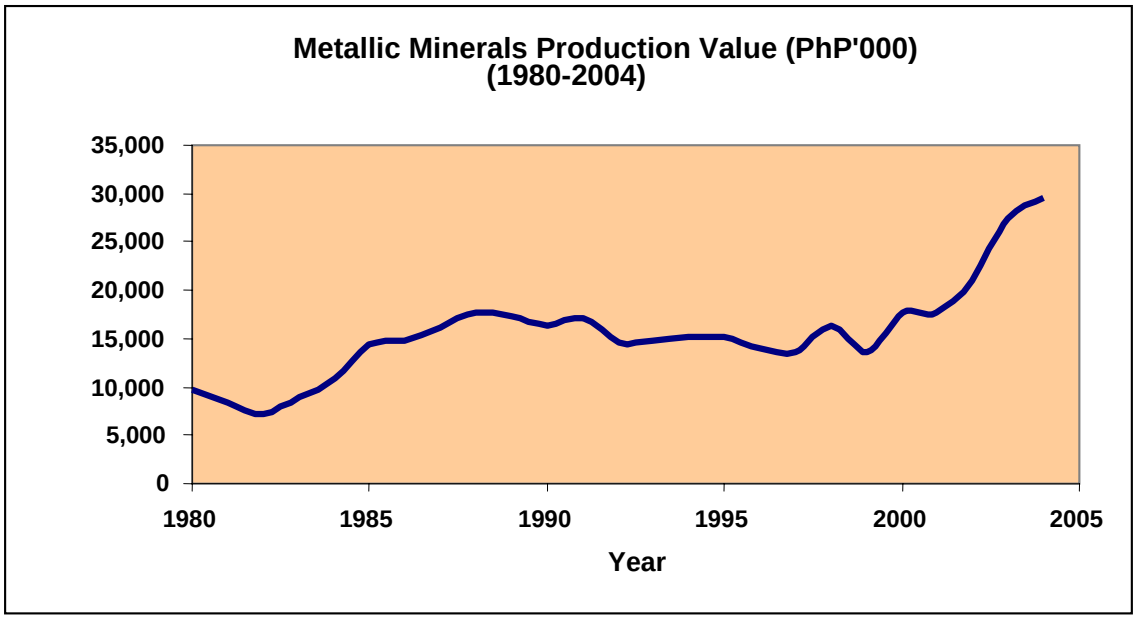
The Troubled Legacy of Mining in the Philippines

To understand the apprehensions generated in many communities in the Philippines by the prospect of new mining activities, it is important to keep in mind the legacy of past experiences. Many of the 7,000-plus islands of the Philippine archipelago sit on underwater volcanic mountains formed by molten rocks from the earth's center. The molten rocks are rich in minerals, and have left large deposits scattered throughout the country (Lyday 2002). In terms of metallic minerals, these include: 1) precious metals (gold, silver, platinum); 2) base metals (copper, lead, zinc, mercury, cadmium); 3) iron alloys (chromite and nickel); 4) light metals (bauxite and manganese); 5) iron; and 6) rare metals (uranium) (Mines and Geosciences Bureau n.d.a).

In terms of estimated value, the country is richest in nickel, gold, copper, and chromite. Based on density of deposits per one-square-kilometer land area, the country is ranked third in the world in gold deposits, fourth in copper reserves, fifth in nickel, and sixth in chromite (*Business World* 2005).

The large-scale production of the chief metallic minerals in the Philippines has experienced fluctuations of varying magnitudes in recent decades. There was a boom from 1982 to 1988, a slow decline from 1988 to 1997, followed by a moderately erratic pattern from 1997-2000. In 2000-2001, there was a slight fall, followed by a steady increase through 2004 (see Chart 2).

Chart 2



Source: Mines and Geosciences Bureau n.d.d; Congressional Planning and Budget Department 2005.

There were boom periods for specific metals: gold mining prospered in the 1920s and the 1930s; copper experienced a rush in the 1950s and the 1960s; and nickel became an important metallic mineral product in the 1970s. The decade of the 1970s was the "busiest for the mining industry as old dormant gold mines were reopened, new gold projects developed, existing copper mines expanded, and new copper projects undertaken" (Lopez 1992).

The surge in the mining industry was driven by high prices for copper and other metals in the world market. By 1980, the country had about 45 operating mines contributing approximately 21 percent of the value of total exports of the country (Cabalda, Banaag, Tidalgo, and Garces 2002).

What followed was a continuous decline of the Philippine mining industry, in spite of multiple government schemes to reverse the trend. The decline of the industry reflected lower global demand for metals, the depletion of operating ore reserves, and the heavy debt of the industry (Congressional Planning and Budget Department 2005).

The measures taken by the government to save the industry were multiple, but their successes were minimal. Between the early 1980s and the end of the 1990s, copper production had dropped by 90 percent as a result of multiple mine closures.[1] The production of nickel and gold, however, increased.

Even during the mining boom, the contribution of the mining industry as a share of GDP was never much more than 2 percent. In recent years, this share has been hovering near 1 percent. Yet, there is considerable potential for future growth (Cabalda, Banaag, Tidalgo, and Garces 2002).

The mining industry saw roughly a threefold jump in formal employment from the 1970s to the 1980s, with a drop of less than 10 percent in the 1990s. In terms of absolute numbers of those employed in mining plus quarrying, the figure was 160,000 at its peak in the late 1980s (Congressional Planning and Budget Department 2005).

This represents direct employment generated by the mining industry. The indirect employment generated from mining, according to the Chamber of Mines of the Philippines, could be four to ten additional jobs per mining job created. There are an estimated 400,000 to 500,000 people engaged in the "backward and forward linkages to the industry" (Israel and Asirot 2000). According to the Senate Economic Planning Office, potential indirect employment from the current 23 priority mining projects envisioned by the government could amount to 136,000 jobs. Indirect employment is projected to occur in related industries such as construction, materials, supplies, and services (Bakshian 2006).

As for small-scale mining in the Philippines, estimates range from 186,000 to 250,000 miners engaged in this kind of work (Israel and Asirot 2000). Thus, it appears that the impact on direct employment of small-scale mining, as precarious and environmentally damaging as that activity may be, is at least as great as that of the formal mining sector. As in many other developing countries, the Philippines faces a significant challenge in improving the lives of small-scale miners, their families, and their communities (World Bank/FESS 2005).

Photo: Katsuaki Terasawa
An Artisanal "Pocket Mine" in Benguet

Mining Accidents

There are several hundred abandoned mines of varying sizes in the Philippines. Many local communities believe these mines have had a negative impact on the environmental quality and the health of the people living around them. Among these mines are the Hixbar Open Pit mine (Rapu-Rapu, Albay), Marcopper mine (Marinduque), Basay Copper mine (Negros Oriental), Thanksgiving Gold mine (Benguet), Black Mountain Copper mine (Benguet), Boneng-Lobo Copper mine (Benguet), and Palawan Quick Silver mine (Puerto Princesa) (Philippine Indigenous Peoples Links 2003).

In addition to the problem of abandoned mines, there have been a number of highly publicized mining accidents. Together, these have painted a decidedly negative image of large-scale mining in the minds of many Filipinos.

Among these mining accidents are three cases involving Manila Mining Corporation. In July 1987, there was a dam failure resulting in a spill of an unknown quantity of cyanide tailings causing fish kill in Placer, Surigao del Norte. In September 1995, a dam foundation failure at tailings pond no. 5 of the Placer copper-gold project occurred due to heavier than normal rainfall. Some residents connected the resulting 50,000 cubic meters of tailings that flowed into coastal waters to the death of 12 people. Then, in April 1999, yet another tailings spill from a damaged concrete pipe in tailings pond no. 7 occurred, again due to heavy rains. This resulted in the release of about 700,000 tons of cyanide tailings and the burial of 17 homes. Manila Mining Corporation paid compensation for some of the damages and helped relocate affected families. However, there remain a number of outstanding community claims. In 2003, Manila Mining Corporation stopped operations. Nevertheless, recently a successor firm has been in discussions to reopen the mine (Philippine Indigenous Peoples Links 2003; Authors' Interviews 2006[2]).

In fact, on its second round of field research, the FESS-Croft team traveled to Surigao del Norte and met with the mayor of Placer, Felimon Napuli. Amazingly, despite the nightmarish experiences of the community with Manila Mining, the mayor said that he was, indeed, in

negotiations with a company that wanted to resume mining in the same area. Mayor Napuli said that, while he was all too aware of the potential hazards posed by the resumption of mining, the people in the region had very few livelihood possibilities, and the mine offered jobs. He was willing to accept a certain level of risk, if the company offered Placer commensurate benefits. The problem was that he did not know what that really was—he did not know what or how much Placer could or should be asking. This was a particularly acute example of at least two things. First, it was an illustration of the difficult calculus involved in balancing the short-term economic needs of communities against what might be damaging long-term consequences. Second, it was an example of how communities lack the capacity and information needed to properly manage (much less negotiate) their relationships with mining companies.

Photo: Mary Ann Luz
Meeting with Hon. Felimon "Monching" Napuli, Mayor, Placer, Surigao del Norte

Over the span of more than half a century, the Lepanto Consolidated Mining Corporation has polluted the Mankayan-Abra River system and deforested surrounding watershed areas. In the 1960s, the collapse of Lepanto tailings dam no. 1 caused a tailings spill onto the rice fields of Lipa-an, Paco. In 1986, there was a collapse of tailings pond no. 3 due to a break in the dam embankment, leading to siltation of the Abra River and affecting nine municipalities. In 1993, the same tailings dam collapsed again. More recently, in July 1999, heavy rains caused a massive land subsidence in Colalo that buried an entire elementary school building, resulting in the death of one employee and displacing a number of families not employed by the mining operations (Palaganas 2004). The incident has since been referred to as the "Lepanto fault." Since that time, both civil society organizations and the provincial governor have expressed concerns to Lepanto over continuing pollution from heavy metals (Authors' Interviews 2006[3]).

Photo: Save the Abra River Movement
Massive ground subsidence from mining in Colalo, Mankayan. The white structures at the bottom are remains of the Colalo Elementary School, 1999.

In Philex Mining Corporation's operation at Padcal, Benguet, a collapse of a dam wall at tailings pond no. 2 occurred in 1992 due to a weakened foundation caused by an earthquake two years earlier. Some 80 million tons of tailings were released, causing heavy siltation in the irrigation system downstream. The company paid Php5 million to the affected farmers. Philex Gold Philippines, Inc., in which Philex Mining holds an 81 percent share, experienced accidents in both Negros Occidental and Zamboanga del Norte. In the case of Negros Occidental, in 1995, the pressure of impounded tailings caused a leak in the decant tower of tailings pond no. 1 at the Bulawan gold mine, resulting in siltation in the Sipalay River. In the case of Zamboanga del Norte, in 1997, heavy rain led to a dam overflow at the Sibutad gold project, leading to fish kills (Philippine Indigenous Peoples Links 2003; Authors Interviews 2005[4]).

The operations of Atlas Consolidated Mining ceased in 1994 but, in 1999, an outlet in a drainage tunnel of an open pit was clogged, resulting in a pressure build-up that loosened the accumulated silt and caused the discharge of an estimated 5.7 million cubic meters of acidic water into the Sapangdaku River, which flows into the open sea. This led to an increase in the acidity of the affected water bodies and a fish kill. The company was assessed a fine equal to US$210,000 for exceeding effluent standards; charges of violating the Water Pollution Law filed with the Pollution Adjudication Board were the subject of protracted consideration (Cabalda, Banaag, Tidalgo, and Garces 2002).

The list of other such mining mishaps could be expanded. But the one mining disaster that has taken on mythic proportions in the Philippines and is invariably mentioned by citizens and government officials alike is Marcopper mine on the island of Marinduque. Through the 1970s and 1980s, Marcopper mine tailings were dumped into Calancan Bay, damaging the local fishing industry. Marcopper was mandated to pay for a Calancan Bay Rehabilitation Program. In 1982,

a dam failure led to the inundation of agricultural land with tailings up to 1.5 meters in depth. In December 1993, the Maguila-guila siltation dam collapsed, causing the death of two children, lost livestock, and the flooding of downstream communities (Philippine Indigenous Peoples Links 2003).

The greatest disaster, however, occurred in March 1996, when a cement plug in an open pit drainage tunnel burst and millions of tons of tailings filled the Makulaquit and Boac river systems. Five villages had to be evacuated, and an estimated 20,000 villagers were affected (UNEP 1996). Damages have been estimated at US$80 million or higher (UNEP MRF n.d.). The government of Marinduque sued Placer Dome, a Canadian company that had a 40 percent share in Marcopper, for US$100 million (Aglay and Ferrer 2005). The experience of Marcopper in Marinduque led to a moratorium on mining in several provinces, including a 25-year moratorium in Marinduque, a 25-year moratorium in Oriental Mindoro, and a 15-year moratorium in Capiz.

These mining accidents and the lingering environmental issues surrounding abandoned mines, in combination with a continuously growing public awareness of similar concerns in mining communities in other parts of the world, have led to a growing constituency against large-scale mining in the Philippines. This constituency is represented by, among others, indigenous peoples' organizations, environmental and legal rights groups working with local communities, many local political leaders, and the Catholic Bishops' Conference of the Philippines.

Response and Reaction: The 1995 Mining Act

On March 3, 1995, President Fidel Ramos signed into law Republic Act 7942, the Philippine Mining Act. The Act was an effort to address some of the problematic issues of mining from the past, including a lack of respect for the rights of indigenous peoples, the failure to include local and regional governments in revenue sharing, and insufficient environmental and social requirements of mining operations. It embedded provisions on mining rights, incentives, government shares, social responsibilities, financial responsibilities, and environmental responsibilities. Its initial passage was immediately hailed by the Chamber of Mines of the Philippines. However, the Act was opposed by environmentalists, social activists, and indigenous peoples' organizations (Rovillos 2003).

At the center of the controversy was the Financial or Technical Assistance Agreement (FTAA) provision that allowed 100 percent foreign control over large-scale mining operations. The Legal Rights and Natural Resource Center (Kasama sa Kalikasan or LRC-KSK) contended that the FTAA was unconstitutional since it violated Article II, Section 2 of the 1987 Constitution, which provides that the FTAA is an agreement for mere assistance, either technical or financial, in the development of mineral resources (Cabalda, Banaag, Tidalgo, and Garces 2002). This became the chief argument against the Act among its opponents. Some organizations accused the government of simply selling the patrimony of the Philippines to foreign capital (Authors' Interviews 2006[5]).

In 1997, environmental groups filed a petition with the Supreme Court to seek a ruling that the FTAA and the Mining Act of 1995 were unconstitutional. What followed was seven years of deliberation and indecision on the part of the Supreme Court. On January 27, 2004, by a vote of 8-5 with one abstention, the Supreme Court declared that the Mining Act indeed violated the Constitution.

Subsequent to that declaration, proponents of the Act stated that the Supreme Court decision nullified only those provisions having to do with the participation of foreign firms in local mining operations, while the rest of the Act was still enforceable. In the meantime, these advocates filed

a motion for reconsideration with respect to the FTAA provisions through the Office of the Solicitor General.

In December 2004, the Supreme Court reversed its earlier decision by a vote of 10-4 with one abstention (Mines and Geosciences Bureau 2004). Thus, the 1995 Mining Act, including its FTAA provisions, was declared constitutional by the highest court in the country.

More broadly, problems in the mining sector did not cease to occur after the passage of the 1995 Mining Act (the most significant being the Marcopper disaster, which occurred right after the initial passage of the law). Nor have the abandoned or legacy mines been systematically addressed. The legislative progress represented by the mining law has not been sufficient by itself to eliminate improper mining practices in the country.

The Mineral Action Plan

While the Supreme Court was considering opening the mining sector to 100 percent foreign investment, the Arroyo administration was preparing to vigorously promote mining in the Philippines. Executive Order (E.O.) No. 270, issued on January 16, 2004 and amended on April 20, 2004, was meant to provide the underlying principles and priorities in the pursuit of revitalizing the Philippine minerals industry. These principles were based on the goals of promoting sustainable development and ensuring responsible mining.

For the implementation of the provisions of E.O. 270, on September 13, 2004 the Office of the President directed the Department of Environment and Natural Resources to formulate an action plan. The outcome was the Minerals Action Plan (MAP), which was crafted by interagency working groups and delineated 12 basic tenets. The MAP was subjected to public consultations and incorporated most of the comments of other government agencies, the minerals industry, and civil society organizations.

The plan's tenets covered both environmental concerns and social considerations, although the order in which these tenets were given appeared to give highest priority to stimulating increased investments in the mining sector. They were as follows:

- The critical role of investments;
- Clear, stable, and predictable investment and regulatory policies;
- Value-adding;
- Promotion of small-scale mining as a formal sector;
- Use of efficient technologies;
- Protection of the environment;
- Safeguarding the ecological integrity of areas affected by mining;
- Multiple land use and sustainable utilization of minerals;
- Remediation and rehabilitation of abandoned mines;
- Equitable sharing of economic and social benefits;
- Sustained information, education and communication (IEC) campaign and respect for the rights of indigenous peoples (IPs) and communities; and
- Continuous and meaningful consultations with stakeholders.

For its medium term goals, which were set for six or seven years from 2004, four urgent tasks were identified along with the corresponding strategies and responsible government agencies for implementing the strategies. The four areas of concern were:

- Promotion of investments in the minerals industry;
- Promotion of greater public confidence in the minerals industry;
- Promotion of greater public acceptance of the minerals industry; and
- Promotion among the industry's stakeholders of open and transparent communication (Mines and Geosciences Bureau n.d.c).

There have been two common criticisms of the MAP: 1) the guardian of mineral resources, the Department of Environment and Natural Resources, is given the conflicting dual role of promoting mining and safeguarding the integrity of the environment and natural resources (what one informant referred to as the "schizophrenia" of DENR), and 2) there is a lack of attention to problems of weak governance, including the enforcement of rules and regulations pertaining to mining. Regarding the latter, interviewees did not believe that further executive orders or new laws would change the situation nor did they expect that additional funds would be forthcoming to strengthen DENR's human resources.

Mine Site Visits: Different Cases, Different Paths

There is a powerful tendency toward polarization in the debate over mining in the Philippines, with those engaged in the debate often adopting either uncompromising anti-mining positions or uncritical pro-mining rhetoric. Our field research has found, however, that there is a broad spectrum of mining practices that cannot be fully encompassed by such a dichotomy. Four cases that reflect various points along that spectrum are the Lafayette Philippines Inc. mine in Rapu-Rapu, Albay; the TVI Resource Development Philippines Inc. mine in Canatuan, Zamboanga del Norte; the Padcal mine of Philex Mining Corporation; and the Coral Bay Nickel Corporation processing operation in Bataraza, Palawan. FESS-Croft team members traveled to each area.

The Rapu-Rapu Controversy: Rumor-Rich and Information-Poor

The recent and highly publicized case of the mine operated by Lafayette Philippines Inc. (LPI) for the extraction of gold, copper, and zinc on the island of Rapu-Rapu in the province of Albay illustrates well how, handled improperly, mining incidents can arouse the passions of local communities and even reach the level of intense national controversy.

A steeply sloped island in a very rainy zone, with a history of mining dating back to World War II, Rapu-Rapu was the first mine site to go into production after the Supreme Court decision affirming the 1995 Mining Act. Rapu-Rapu was touted as a "test case" and a demonstration of responsible mining by the Department of Environment and Natural Resources. Other informed observers were not so sanguine, but they were ignored. Emelina Regis of Ateneo de Naga University and her colleagues warned of the likelihood of acid mine drainage and pollution, saying that "even with the promise of 'clean' mining technology of which no proof has been presented by Lafayette Philippines Inc., there is no guarantee that the island and its people will be safe from environmental damage" (Regis, Medrano, Azurin-Conde, and Regis 2001).

LPI operations were preceded by community consultations, new roads, and a number of other social benefits (e.g., housing, community centers, and relocation compensation). However, rumors also circulated in Albay that cash payments had been made to officials to speed up approval processes for the mine and that special tax breaks had been given to the company (Authors' Interviews 2006[6]).

On October 11, 2005 a tailings spill occurred at Rapu-Rapu when a pump failed and an emergency pond overflowed into nearby creeks leading to the ocean. LPI temporarily shut down, and the community of Binosawan reported coastal fish kills. Initial testing by the Mines and Geosciences Bureau (MGB) at the mouth of the creeks showed free cyanide levels thousands of times above the DENR standard of 0.05 mg/liter. However, two days later, another test by MGB showed the free cyanide had dissipated, returning to levels below or near the DENR standard.

As a result of this incident, the regional DENR office issued a Notice of Violation to LPI, but a week later a provincial agricultural official also requested the Bureau of Fisheries and Aquatic Resources (BFAR) to investigate the mining spill.

On October 31, 2005, a second tailings spill occurred when heavy rains caused LPI to release runoff from their settling ponds. A larger fish kill was observed by people of Binosawan and Malobago. LPI sent a letter of notification to the DENR regional office providing notification of the second spill. The DENR regional office subsequently fined LPI for violating the conditions of its Environmental Compliance Certificate.

On November 4, personnel from BFAR, accompanied by local officials, tested water and fish samples in the area. However, the BFAR officials had no established methodology for the testing and relied on locals for advice on where to take samples. Further confusing matters, the BFAR officials tested for *mercury*, which was not used by LPI in its mining operations. A week later, BFAR reported that water and fish samples from the coastal bay of Albay and the bordering province of Sorsogon were found to have mercury levels above the standard limit. This announcement became the headline of many news stories and was widely broadcast by both local and national media.

In response, Mayor Benito Doma of Prieto Diaz, Sorsogon requested BFAR to test fish samples in his area and surrounding areas for mercury, and Governor Raul Lee of Sorsogon dispatched a Multipartite Monitoring Task Force to investigate the presence of mercury and cyanide in the coastal waters of Sorsogon. On December 6, BFAR analysis of fish samples from Prieto Diaz showed mercury levels above the standard limit and unfit for human consumption, and the following day BFAR found that fish in the area tested positive for the presence of cyanide.

With these announcements, which also received extensive media attention, a fish scare began. Residents stopped buying marine products caught by local fisherman, who saw their sales plummet. In mid-December, new BFAR water and fish samples were found to be within the standard limit for mercury, but several fish samples from area communities tested positive for cyanide.

Given the fisheries crisis and the lack of clear information, local officials appealed for additional help. Four mayors from Sorsogon asked for a Congressional investigation of LPI. Mayor Doma of Prieto Diaz wrote a letter to Catholic Bishop Arturo Bastes requesting the "intervention and support of the diocese of Sorsogon." Governor Lee of Sorsogon wrote to the Natural Sciences Research Institute at the University of the Philippines requesting an independent fish and water sampling. Meanwhile, with public pressure mounting, DENR Secretary Michael Defensor signed a Cease and Desist Order against LPI and levied a fine of approximately US$200,000.

As public anxieties increased, local officials, fisherfolk, NGOs, and church workers staged a "fluvial rally" at the water's edge of the mine site to dramatize their opposition to LPI. Throughout the previous two and one half months, Lafayette Philippines Inc. had managed the situation very poorly. The company did not deal with the public or local communities in an open

and transparent manner. Rather, LPI officials stressed the small scale of the tailings spills, made relatively few public comments, and denied public officials and citizens access to its mining site (Authors' Interviews 2006[7]).

On January 18, 2006, however, LPI announced that the firm's management was being taken over by Carlos "Sonny" Dominguez, a well-connected businessman and former secretary of agriculture. Dominguez stated that LPI would now provide more information to the public, allow greater access, and ensure environmental protection.

The Catholic Bishops' Conference of the Philippines (CBCP) was not assuaged. On January 29, 2006, the CBCP issued a pastoral letter calling for a nationwide ban on new foreign investments in mining and the repeal of the 1995 Mining Act. In response, the Arroyo administration at first announced the cessation of mining permits, but then reversed its position the following day after this created an uproar in the mining sector and the broader business and investment community.

With the Rapu-Rapu controversy having reached the national level, President Arroyo traveled to Albay to meet with local government officials and groups from civil society to discuss the situation. These discussions made clear to the president that the public was confused and alarmed by conflicting information with respect to the presence of mercury or cyanide in the bay and that there was little confidence in the statements of either Lafayette or DENR.

Photo: David Duran
Banner at the Rapu-Rapu pier protesting against Lafayette Philippines Inc. (LPI), Nov 4, 2005.

Accordingly, President Arroyo announced an independent study to be conducted by the University of the Philippines regarding environmental and health issues. She also announced the formation of an independent commission headed by Bishop Bastes to assess the overall situation with respect to the resumption of LPI's mining operations at Rapu-Rapu. Here, high-level politics intersected with the mining crisis. On the surface, it seemed counterintuitive, to say the least, for the president to select a well-known and vocal anti-mining advocate like Bishop Bastes to head an "independent" commission. However, ever since her near-impeachment in July 2005

had been averted, in large measure due to the Catholic bishops' decision not to seek her removal from office, President Arroyo was careful to maintain good relations with them. Indeed, when we interviewed Bishop Bastes and asked him why he had been chosen, he indicated that the president was making a gesture that was helpful to her politically.

The results of the University of the Philippines study dispelled fears concerning any remaining presence of mercury and cyanide in the fish and waters off Rapu-Rapu Island. However, the report of the Rapu-Rapu commission headed by Bishop Bastes, predictably enough, was highly negative in regard to Lafayette's entire mining operation. The commission found that the Rapu-Rapu mine should remain closed and the government should withdraw the company's Environmental Compliance Certificate. The Bastes commission members asserted that Lafayette had begun operations before the completion of its environmental protection infrastructure and had downplayed the effects of its tailings spills. Moreover, Bastes et al. said that DENR had been negligent in failing to properly monitor Lafayette's operations (Rapu-Rapu Fact-Finding Commission 2006). In response, the company's spokesman said that the findings of Bishop Bastes's commission were "unscientific" and reflected "an unforgiving bias against mining" (Associated Press 2006).

By the spring of 2006, the Rapu-Rapu controversy had reopened debate over the adequacy of the Mining Act of 1995. The Speaker of Congress, Jose de Venecia, promised the CBCP that Congress would review the law to see if changes in the law were necessary. Meanwhile, officials of the Arroyo administration made statements affirming the government's commitment to the maintenance of a stable and open regulatory environment for foreign investors. On June 13, 2006, LPI was given permission by the government to reopen for a 30-day test run (Rivera, Gaylican, and Labalan 2006). Lafayette also made modifications to their operating systems to improve safety and answer specific issues and concerns raised by DENR. Despite continued debate over Lafayette's operations, an order permanently lifting the suspension of activities at LPI was issued on February 8, 2007.

TVI: Is Responsible Mining Possible in a Conflictive Environment?

The processing and mining operations of TVI Resource Development Inc. (TVI) at Canatuan in Zamboanga del Norte have been troubled since they began in the mid-1990s. In retrospect, this is hardly surprising, as TVI chose to mine a site in a region of the Philippines that was characterized by competition over the control of small-scale gold mining activities, infighting among the local indigenous people, and guerrilla operations of the New People's Army (NPA) and the Moro Islamic Liberation Front (MILF).[8]

There was a gold rush in the area of Canatuan in the late 1980s and early 1990s. Panners came from throughout Mindanao and elsewhere to set up small-scale mining activities. At first, gold was extracted using small rod mills for grinding the rocks and mercury and cyanide for capturing the gold. Later, cyanide extraction plants were used for the same purpose. In each case, these toxic chemicals were allowed to flow into makeshift tailings dams from which they often leaked into surrounding creeks and waterways.

The people living in the area were an indigenous group, the Subanen, who for the most part worked as laborers for the small-scale miners. However, the rod mills were also owned by a small group of Subanen, who thereby exerted a significant measure of control over the small-scale mining taking place. In 1992, the Siocon Subanen Association Inc. (SSAI) was created to organize the interests of the Subanen people. (Siocon is the name of the nearest sizable town.) Two of the leaders, Timuay Jose Anoy and Onsino Mato, were among those with strong influence over small-scale mining activities, and the SSAI stated its opposition to the introduction of large-

scale mining. Some within the SSAI dissented from this position and believed that that small-scale mining benefited only a few within the Subanen community.

When the Indigenous Peoples Rights Act was passed in 1994, SSAI applied for a Certificate of Ancestral Domain Claim (CADC) for Canatuan, but a group led by Marciano Sapian and others called into question the representativeness of the claim, as some Subanen leaders had not been included as signatories to it. Sapian's group filed a separate CADC. In 1997, DENR issued the CADC to the Subanen, covering over six million hectares. Anoy and Mato asserted that the CADC had been issued to them personally. However, in the next phase of the process, DENR issued the Certificate of Ancestral Domain Title (CADT) to the "Subanen of Zamboanga del Norte."

It was while these tensions were mounting that TVI moved into the area. In 1996, TVI received a Mineral Production Sharing Agreement from the Philippine government allowing exploration within Canatuan. A year later, TVI received its Environmental Compliance Certificate for the mining project. As the prospect of large-scale mining operations clearly threatened those benefiting from small-scale mining, SSAI and a number of NGOs mobilized demonstrations against TVI's entry.

In 2001, a new election was held for the leadership of SSAI. Anoy and Mato were ousted and replaced by Juanito Tumangkis, who issued a "manifesto of disgust" over the prior leadership. However, Anoy and Mato continued to claim they were the leaders of SSAI.

Although TVI claimed that its rights to mine in the area predated SSAI's CADC, the company entered into a Memorandum of Understanding (MOU) with the new Subanen leadership. The MOU provided a royalty to the Subanen in the amount of 1 percent of mining revenues and committed the company to provide community support in the form of housing, education, and health care.

TVI did not begin mining operations immediately. Instead, the company reached an agreement with DENR to process existing mining tailings and to clean up many of the contaminated sites left by small-scale mining operations.

Protests and conflict between the Subanen groups and between TVI and those in the Subanen community committed to small-scale mining continued. In December 2002, Marciano Sapian, several family members, and a number of TVI employees were killed on the road to the mining area, allegedly by members of an MILF "lost command" that many believed had links to opponents of the new SSAI leadership. In response, TVI strengthened its security arrangements.

Security had been a serious concern for TVI from the outset, given the presence of the NPA and MILF. TVI made use of Philippine legal provisions allowing for the formation of Special Citizen Active Auxiliary units (SCAA) under the supervision of the Armed Forces of the Philippines (AFP). SCAA units at TVI are predominantly staffed by Subanens, although few of them are from the immediate area. A number of tense, conflictive, but generally not violent situations have arisen at checkpoints between SCAA units and local residents, and TVI admits that some of these incidents have not been handled well.

Other observers are far more critical and have accused the SCAA of serious abuses. It is also worrisome and problematic that, despite the AFP's ostensible supervision of the SCAA units, it is really TVI that fulfills that responsibility.

During the past two years, TVI has begun its active gold and silver mining operations. Our field research showed that TVI is making serious efforts to ensure environmental protection and provide meaningful community benefits. Testing of the nearby creeks and streams for toxic wastes or by-products is continuous and rigorous. The company has spent over US$1 million to construct a state-of-the-art tailings dam. TVI has constructed many new housing units, and improved educational opportunities and health care services in Canatuan. In interviews, several Subanen elders stated that a clear majority of the Subanen are supportive of TVI's presence in Canatuan. At the end of 2005, TVI brought in new staff to work in community development. These were professionals with long experience in the field who had worked for many years with well-known activist organizations committed to improving the lives of the poor in the Philippines. These staffers provided FESS-Croft team members with numerous documents about TVI operations, including many that were highly critical of past actions by TVI. The week before our visit they had hosted an investigative human rights group from Canada. By all visible evidence, and despite a less than perfect record, it appeared that TVI has a basic commitment to practicing responsible mining.

At the same time, other groups that have visited the TVI area (although not the mine) have come to different conclusions. For example, a team led by Claire Short, MP and former UK Secretary of State for Development, credited claims by dissident Subanen leaders that TVI has polluted waterways, evicted families, and used violence and intimidation by the SCAA to block the free movement of indigenous people and their transportation of food and equipment (Doyle, Wicks, and Nally 2007). However, our interviews with Subanen elders, the TVI manager for environmental protection, and the newly arrived community development staff at TVI led us to be skeptical about the accuracy of a number of these claims, especially in relation to alleged environmental damages.

Nevertheless, the experience of TVI raises serious questions about where and when companies locate their operations. Conflicts over land rights in Canatuan have been resolved officially, but still continue to produce lingering resentments. Some small-scale miners have come to work for TVI, some have left the area, but others have yet to adapt to TVI's presence. Some observers see TVI as having played one side against the other in its handling of relations with the Subanen. The continued use of the SCAA units has the potential to lead to an explosive situation. Community relations at the mine still have a long way to go.

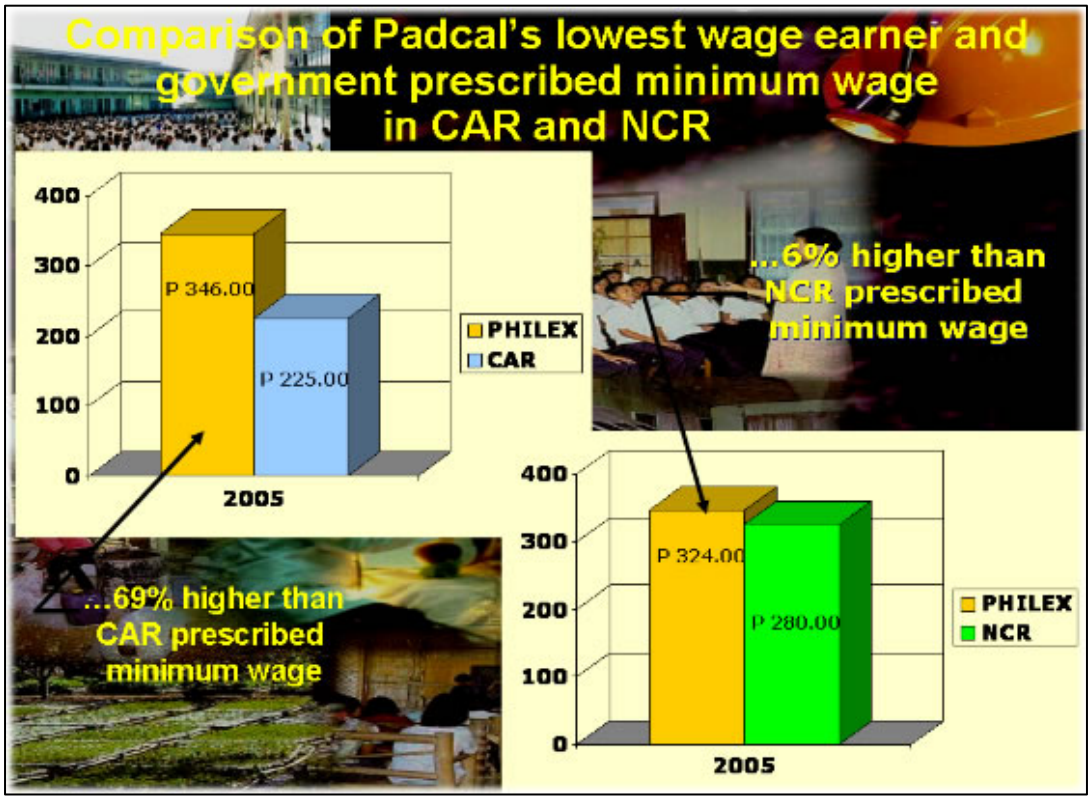
The case of TVI is a reminder that there is no simple formula for responsible mining. Each situation is contingent on the specific geographical, historical, cultural, social, economic, and political context where mining operations are to take place.

Padcal Mine: An Early Model for Responsible Mining?

In our field visits and interviews, there were so many stories of mining accidents and irresponsible mining that it raised the question of counterexamples—were there any mine sites that offered positive examples and practices that could be replicated? After a meeting with the president of Philex Mining Corporation, Ernesto Villaluna, in Manila, a visit was arranged to Philex's mine site in Padcal, Benguet.

Padcal is not just a copper and gold mine but also a community of some 14,000 people, approximately 2,300 of whom are employed at the mine. The mine dates back to the 1950s and has been expanded in several phases. Originally a logged-out area, the Padcal environs have been largely reforested by the company. It is the first metal mining company in the Philippines to acquire ISO 14001 certification. (ISO 14001 is a set of internationally accepted criteria for environmental management systems.)

A visit to Padcal showed there to be an impressive collection of community benefits provided by the company as well as a strong financial commitment to environmental protection. Employees receive free housing and health care, while elementary education is free, and secondary education is subsidized at around 70 percent of operating costs. The company also provides extensive skills training for alternative livelihoods and two cooperatives provide credit for training and education. Wages are considerably above mandated minimums; the lowest Padcal earner receives 69 percent above the government minimum for the Cordillera Autonomous Region and 6 percent more than the minimum for the National Capital Region.



Source: Philex Mining Corporation 2006.

As mentioned above in relation to the collapse of its tailings pond no. 2 in 1992, Padcal mine does not have a completely unblemished environmental record. However, in recent years, Philex Padcal has instituted extensive effluent monitoring, early warning systems, rehabilitation of slopes, subsidence backfilling, and management of hazardous substances and wastes. In 2005, Padcal spent a very robust 6 percent of mining and milling costs on environmental safeguards.

While at the Padcal mine site, FESS-Croft researchers were able to meet with the two unions of the company—the Philex Mines Supervisory Employees Union and the rank-and-file National Mines and Allied Workers Union. The main issue of concern was the anticipated closure of the mine in 2011. Workers are especially concerned about retraining, alternative livelihoods, and housing. The terms and conditions are to be worked out in 2008, but workers were disturbed by things they had heard indicating that the compensation fund set aside by Philex for the mine closure was far short of what is needed. These concerns about job security seemed to be very much in the context of workers feeling that these were, indeed, good jobs. When rank-and-file members were asked what they would say to the Catholic bishops in response to their pastoral

letter calling for a ban on new mining investments, the first response was, "I'd tell them to shut up!"—followed by general laughter.

The environmental protections and social benefits at Padcal are impressive, and Philex does appear to be making a serious effort to practice responsible mining there. However, three considerations are worth keeping in mind. First, the fairly elaborate programs and systems of social support that one sees at Padcal are the cumulative result of a 40-year process of adjustments and improvements. They did not happen overnight. Second, at Padcal, Philex is voluntarily spending *far* above the requirements mandated by law. And, third, having reached a pattern of operation that approximates responsible mining, the mine is now getting ready for its anticipated closure. In others words, one should not confuse responsible mining for "sustainable mining."

Coral Bay: A Commitment to Community Development

The operations of Coral Bay Nickel Corporation (CBNC) are neither as troubled nor as complicated as those of Lafayette in Rapu-Rapu or TVI in Canatuan. It is also much newer than Padcal and quite different in nature. CBNC, which officially began operations in April 2005, is not engaged in active mining operations but is actually a hydrometallurgical processing plant.[9] It is co-located with Rio Tuba Nickel Mining Corporation (RTNMC), and CBNC processes RTNMC's stockpiles of nickel and cobalt ore.

Nickel mines do not present the same kinds of pollution concerns as gold or copper mines. Typically, there is no lead, arsenic, mercury, or cyanide that is used or produced. Nevertheless, CBNC, with Sumitomo Metal Mining Company as the majority owner, has allocated huge sums (US$180 million) to environmental protection and pollution control facilities.

Rio Tuba's nickel mine operations did come under criticism in years past. Problems with the siltation of tailings dams and community concerns over pollution were part of the historical backdrop in the area. Before CBNC went into operation, concerns were also raised about the possible displacement of indigenous families and the possibility of deleterious effects on mangroves and the nearby coral reef.

CBNC dealt with these fears directly by launching extensive environmental and social programs. Technologically sophisticated siltation dams and tailings dams were constructed, along with a waste-water treatment plant and air pollution control facilities. CBNC put a far-reaching water monitoring program and real-time detection system into place. An abandonment plan was instituted to assure that during the ten years after the cessation of operations all affected lands will be rehabilitated and reforested.

Perhaps even more impressive has been CBNC's commitment to community development. Since 2004, CBNC funds have been used to build day-care centers and schools, provide school support and scholarships, construct new roads, deliver free medical services to 11 villages, distribute farm implements such as threshers and tractors to indigenous farmers and fishing boats to fisherfolk, initiate animal husbandry programs, and even open a marine sanctuary.

All told, CBNC's spending on social development programs is more than 10 times the amount required by law. These efforts have been recognized by numerous awards citing CBNC's example of corporate social responsibility. More importantly, CBNC has made an observable positive impact on the lives of the people in the region. CBNC stands as a model mining operator with regard to social and environmental issues and demonstrates that responsible mining that produces a win-win outcome for both the company and the surrounding communities is indeed

possible when grounded in a real financial and corporate commitment. But like Padcal, CBNC is an exception in an otherwise troubled mining sector.

VI. SCENARIOS

Scenarios are not predictions; rather, they seek to define the boundaries of the possible in ways that illuminate different potential futures. These possible futures are contingent in large measure on human agency—decisions made by elected officials, civil servants, clergy, military personnel, foreign government representatives, civil society activists, company officials, and citizens in communities across the Philippines. Policy actions, or the decision not to act, will influence greatly the development of the mining sector in the Philippines and its potential for enhancing or impeding social and economic well-being, stability, and security.

It is worth restating the definition of environmental security used in this study:

Environmental security is a condition whereby a nation or region, through sound governance, capable management, and sustainable utilization of its natural resources and environment, takes effective steps toward creating social, economic, and political stability and ensuring the common welfare of its population.

As can be seen in this definition, environmental security is an ongoing process rather than a static achievement. Similarly, the purpose of the three scenarios that follow is to trace out possible trends and directions rather than predict certain outcomes.

All of the scenarios rest upon several basic premises. First, the global market for minerals is likely to remain strong for the foreseeable future. In 2006, gold prices were at a 25-year high, silver prices hit a 23-year peak, nickel was at highest price in 17 years, and copper and zinc prices reached record highs (Nguyen 2006; Schroders 2006). Price fluctuations are always possible, but with nations like China, India, and Brazil moving to higher levels of industrial production, overall demand is likely to remain high. Second, China's growing demand for minerals will drive much of the investment in the mining sector of the Philippines. One recent example is the March 2007 announcement of an initial investment by Rockcheck Steel Group, based in northern China, of US$200 million for the construction of a ferro nickel plant in Eastern Samar (*Asia Pulse* 2007). Third, "responsible mining" is still much more a hope than a reality in the Philippines. Indeed, responsible mining is a set of practices and relationships to be achieved, not a goal that can be reached through industry slogans or government proclamations. Lastly, the problems of the mining sector and the conflicts they produce have both tangible and symbolic dimensions. The pollution of rivers and coastal areas, lost agricultural land and fish kills, threats to human health and safety, and labor disputes and community protests are all observable effects of irresponsible mining. However, these outcomes are also viewed by many Filipinos as symbolic of deeply embedded and enduring grievances over economic injustice, political exclusion, and foreign exploitation. For the analysis of potential instability and conflict, such perceptions, whether accurate or not, have the weight of reality.

Scenario One: Risky Business

An initial scenario, which plays out over time in the baseline trends identified in this study, suggests serious problems and the potential for events that may inhibit the flow of foreign investment or further destabilize an already volatile political scene.

How do things presently stand? The current debate surrounding the mining sector in the Philippines is polarized. The central government is primarily concerned with promoting foreign investment in mining. In the wake of the Rapu-Rapu controversy, the government has shown an increasing appreciation of the deep public mistrust vis-à-vis the mining industry and has adopted a more thoughtful discourse. However, many local government units (LGUs), communities, and citizens have yet to be convinced that the national government's new tone is anything more than lip service. This skepticism is reinforced by the fact that the Department of Environment and Natural Resources has very little credibility with the public, and that the media are at times not very well informed about mining issues and in some cases quick to sensationalize fragmentary information.

The Chamber of Mines plays a highly visible public role in relation to mining issues, consistently trying to cast the industry in the most favorable light and downplaying mining mishaps and misbehavior while seeking to draw attention to the economic bonanza that mining is supposed to bring to the country. The Chamber also seeks to crowd out other, more critical perspectives. None of this has served the Chamber well in terms of its reputation.

Many NGOs are equally one-sided in their hyperbolic denunciations of mining. It is true there have been well-documented instances of egregious behavior on the part of mining companies, which have resulted in serious environmental and social consequences. But to advocate, based on these cases, a blanket rejection of foreign investments from multinational firms or the adoption of a total ban on large-scale mining detracts from a much-needed focus on specific problems within the sector. It also opens the door to facile, broadbrush criticisms of the NGO community, adding to the unfortunate reality that much of the mining debate is a dialogue of the deaf.

In principle, the Catholic Church could be a bridging institution for a more thoughtful and conciliatory discussion of the problems and future of the mining sector. So far, despite efforts at dialogue with the private sector, the Church has not played this role with notable success. Instead, notwithstanding a fairly diverse array of perspectives held by the bishops of the CBCP, anti-mining advocates have dominated the discussion and issued somewhat exaggerated statements that, while perhaps capturing the fears of their congregations, do not always reflect a careful assessment of the facts.

The first scenario takes as its guide the axiom that past practice is the most reliable guide to future behavior. From this standpoint, there is little reason to expect that Rapu-Rapu will be the last mining accident in the Philippines, although other mishaps will have their own specific characteristics. With the interested parties and stakeholders polarized as described above, another mining incident or set of incidents would lead to an intensification of tensions. The Church and activist NGOs would see their anti-mining stances confirmed, encouraging them to once again pressure the Arroyo government to stop the 23 priority mining projects of the Mining Revitalization Program. They also would mobilize their memberships in support of affected communities. Those communities would seek allies in the media, civil society, and other LGUs. With a strong sense among many citizens of déjà vu, provincial government leaders would be under pressure to follow the suit of Marinduque, Oriental Mindoro, and Capiz and declare an extended moratorium on any further mining projects.

For their part, the Chamber of Mines and their member companies would be thrown once more on the defensive, forced to identify the unusual or atypical circumstances associated with the incident(s) and argue that they are not characteristic of the broader adoption of responsible mining with the industry. DENR would come under close public scrutiny with respect to the accuracy of its statements. Any statements that are perceived to be in defense of the offending

mining company—whether accurate or not—would be greeted with widespread skepticism and, in some quarters, derision. With both government and industry seen as tainted by self-interest, newspapers and commentators would cast about for qualified "independent" authorities to conduct a fact-finding investigation.

The Arroyo administration would be caught once again in a vise. The anti-mining position of the Church would be harder to rebuff than ever. There would be no possibility of a "Bastes Commission II" to be used for cathartic effect. At the same time, the mining industry and the broader investment community would see their interests directly affected and would bring considerable pressure on the Arroyo government to resist calls for any sort of moratorium on mining investments. The Arroyo government also would face the bitter prospect of losing millions of dollars in investments that were an important part of its overall plans for continued economic growth.

If such a mining incident took place at a moment of heightened political vulnerability for the Arroyo administration, as was the case in July 2005 and February 2006, it might feel obliged to move closer to the anti-mining position of the Church. Alternatively, the Church might withdraw its tacit support for the president and let other anti-Arroyo forces take their course.

A wild card would enter this scenario if the offending company were Chinese-owned. This could trigger ethnic resentments in the affected community along with serious reverberations for the future of much-anticipated Chinese investments now coming on stream.

In sum, the first scenario, based on current trends, envisions a significant risk of further crises in the mining sector that would threaten to diminish foreign investment and even, under certain circumstances, undermine the stability of the Arroyo government. Any new mining accidents also would have damaging environmental, economic, and social consequences for the affected communities.

Scenario Two: Cumulative Conflict

The first scenario is sufficiently worrisome but does not represent the worst possible case. The second scenario, which is much less likely than the first but still plausible, envisions the interaction of a number of variables in ways that create alarming negative synergies.

This scenario envisages one or more major mining accidents in areas of the Philippines populated by indigenous peoples or the predominantly Muslim areas of Mindanano. It should be noted that the National Democratic Front, or NDF (the political arm of the New People's Army), the MILF, and Abu Sayyaf all have issued statements against mining. In December 2005, the NDF made the repeal of the 1995 Mining Act one of its stated negotiating positions (Jaladoni 2005). The MILF takes the same position (Maiten 2007). Jun Mantawil, chairperson of the MILF peace panel, stated in May 2006 that mining "…rapes, extracts, denudes, divests, drains, and brings forth deaths and destruction to our environment and marginalized population" (Reuters 2006). Mining companies in Mindanao allegedly have paid large amounts of extortion money to the NPA, MILF, and Abu Sayyaf (Snell 2002).

All of the competing forces, problems, and tensions contemplated by the first scenario also would be present in the second scenario. However, to these would be added the involvement of Philippine rebel groups. In a situation in which an offending mining company became both a national symbol of the exploitation of national patrimony by foreigners for the benefit of the few and a despoiler of the lands of marginalized peoples, the entire mining sector might be at risk of attack by the NPA, the MILF, or Abu Sayyaf for propaganda purposes or simply terrorism.

Under such conditions, mine sites or mine company facilities, which are scattered widely around the country, would be difficult to protect. A major mining accident would provide an almost perfect "illustrative case" of social injustice, disrespect for the land and safety of indigenous peoples and Muslims, and the use of the government's power for the enrichment of elites. It also would stand symbolically for corruption and the hypocrisy and fecklessness of government assurances about responsible mining. Were this scenario to play out, one could expect a strong reaction (or overreaction) from the AFP, which might only serve to escalate the situation further, inflaming the passions of ethnic or religious minorities.

The results of any situation approximating the second scenario would include the loss of life and property, a sharp dropoff of foreign investment and, very likely, a larger political crisis with significant consequences for the central government and national stability. If acts of terrorism became entwined with other elements of this scenario, it could take on international dimensions. The second scenario is not likely, but it (or something like it) is not beyond the bounds of possibility.

Scenario Three: Reality Check

Neither of the first two scenarios represents a necessary outcome. Although the first scenario is not hard to envision, it is predicated on the continuation of current trends. However, there is likely to be some significant change from these trends. The question is: "What kind of change?"

This scenario envisions change based on a number of important realizations by key stakeholders. The first of these would be a general realization that the current impasse in relation to the debate over mining in the Philippines—that is to say, a near absence of productive dialogue between mining advocates and mining critics amid finger pointing, harsh accusations, and deep mistrust—is a recipe for continued instability and conflict. The Chamber of Mines and industry leaders would realize that promoting the notion of responsible mining cannot by itself overcome the resistance and doubts of communities with real lived experiences of irresponsible mining. The Arroyo government and DENR would realize that the obvious asymmetry between their own vigorous promotion of mining as an engine of economic development and their perceived ineffectiveness in the implementation of environmental protection undercuts their declarations of a new era of responsible mining.

For their part, NGOs and LGUs with positions highly critical of mining would realize that, absent a series of major accidents (which is what they wish to avoid), mining in the Philippines is around to stay. The question is how to shift the precepts of responsible mining from mere sloganeering to an increasingly observable reality. Similarly, the Church would move more decisively toward its natural role as a bridge and conciliator between communities and various stakeholders.

These shifts in perspective would not be based on a sudden surge of good intentions. Rather, they would be grounded in an appreciation of just how precarious the present situation is. Those in the mining industry would see that further accidents will tar the entire sector with the same brush and threaten the profitability of all companies. A strong logic already exists for self-monitoring and self-policing within the industry. Activist NGOs would see that unequivocally rejectionist positions have not produced the desired results, changing neither behavior nor outcomes. The Arroyo government would see that its economic strategy and political fortunes could be placed at risk by another, perhaps more dramatic, episode like Rapu-Rapu.

Stakeholders on both sides of the mining debate would realize that building confidence is essential for a revitalized and responsible mining sector. Corollary to this, however, would be the

realization that the lack of information regarded as reliable by all parties is a stumbling block to effective dialogue and mutual trust.

The third scenario is obviously much more optimistic than the first two scenarios. But even if it were to come to pass, it would simply set the stage for dialogue, confidence-building, and negotiation among stakeholders. Real incentives for changes in the behavior and practices of mining companies would have to follow. The industry-wide implementation of environmental safeguards and the provision of appropriate social benefits for mining communities throughout the Philippines will be a long-term process under the best of conditions.

VII. CONCLUSION

The Republic of the Philippines is richly endowed with mineral deposits that—if responsibly mined and managed—have the potential to contribute significantly to national development and the social and economic well-being of the population. The Philippines also has notably comprehensive national legislation and regulatory provisions that address indigenous rights, environmental concerns, and social benefits related to mining.

However, our research and interviews show that, with only a few exceptions, responsible mining is yet to become a reality in the Philippines. Similarly, interviews with dozens of government officials, civil society activists, community leaders, and business representatives from across the country indicate that the implementation and enforcement of Philippine mining laws, amendments, and administrative orders are erratic and weak. Moreover, in the near term, large increases in additional resources for implementation and enforcement of mining laws and provisions are not likely to be forthcoming.

Neither mining, nor the foreign investment it generates, is an end in itself. Mining is not an economic "silver bullet" but a potentially dynamic economic sector that should be viewed in the context of the broader development goals of local communities, provinces, and the nation. Responsible mining requires taking into account not only environmental, economic, and social effects on the host communities during the life of the mining operation but also the long-term impact of mining activities on those communities in the years after mine closure.

The widespread fears and skepticism of communities in relation to mining are understandable. They are based on well-known, real experiences of irresponsible mining—for example, Placer Dome in Marinduque, Manila Mining in Surigao del Norte, Lepanto in Benguet, and Lafayette in Albay. Examples of responsible mining barely exist and are little known. Philex's operation at Padcal in Benguet is perhaps the only longstanding example, although it, too, has not been problem free; and Coral Bay in Palawan is emerging as a new example, although it involves only the processing of tailings, not active mining.

The mishandling of the situation at Rapu-Rapu, which was touted by the government as a "test case" of responsible mining, has both deepened public mistrust and frustrated officials at other mining companies who worry their own operations have been tainted. The mining industry is viewed as having a closed, defensive posture of "excuse-making" and "cover-up" rather than one of active self-policing and transparency.

In these circumstances, we conclude that in the Philippines the development potential of the mining sector is likely to be realized only through the creation of sufficient trust funds to ensure proper environmental safeguards and community benefits.

To date, the conduct of most mining companies operating in the Philippines has not produced sufficient safeguards and benefits. The enforcement capacity and will of the Philippine government have been too weak and inconsistent to ensure them. And the provisions of the Mining Act of 1995 are implemented too inconsistently to guarantee the realization of the necessary safeguards and benefits.

At the same time, while calls for a total ban on mining reflect real environmental and social concerns, they are, in our opinion, unjustified. Examples of environmentally sound and socially beneficial mining operations *do* exist, but they generally involve operations where companies voluntarily go far beyond the provisions of the Philippines Mining Act of 1995. This is costly but essential to the practice of responsible mining.

The public debate over mining in the Philippines rests upon a weak knowledge base, and the statements of government and mining companies have little credibility with affected communities. Communities often know little about the actual mining process and are poorly prepared to judge the nature and seriousness of accidents, real or alleged. Both government and mining companies do a poor job of communicating and sharing information with the public-at-large. Indeed, the lack of transparency on the part of many mining companies is counterproductive and a threat to the viability of the industry. However, it is also true that anti-mining advocates often make exaggerated claims or inaccurate statements that detract from rather than enhance the quality of public debate.

Perhaps worst of all, data is often incomplete or not authoritatively verified by credible, independent sources, although such expertise is available. As demonstrated by the Rapu-Rapu tailings spills and subsequent controversy, if public trust and confidence in the mining sector are not established, efforts to revitalize the sector are likely to fail. Public attitudes about mining can only be changed by real examples of responsible mining practices that bring tangible benefits to communities. Promotional statements about responsible mining will not build public confidence.

If communities do not receive tangible socioeconomic benefits from mining and are not protected from environmental threats, protests are likely to increase in number and mining operations will become untenable.

Mining firms with good reputations to keep and healthy financial resources are more likely (although not certain) to engage in socially responsible mining. Such firms are typically international or they are domestic firms with ties to reputable international firms. In the short run, socially responsible mining costs more and requires considerable financial resources—but this is the sine qua non of long-term viability.

We are cognizant of the fact that this will increase the financial threshold for the entry of mining companies into the Philippines. Some may view this as a barrier to foreign investment. However, it is only a barrier to *irresponsible mining*, which is the real threat to the viability of the mining sector and continued foreign investment. It is only by achieving real, responsible mining through strengthened environmental protection and tangible benefits to local populations that mining in the Philippines will be able to realize its potential as a sustainable pillar of the national economy.

Based on the track records of domestic and foreign firms in the Philippines, calls for excluding foreign investment are short-sighted and run contrary to the actual performance of companies. Yet, additional actions on the part of both government and the private sector are needed if the mining sector is to be productive and stable. There are important steps that civil society and the donor community can take as well. The recommendations that follow below outline some of the actions that we consider to be most important.

The problem of mining and conflict in the Philippines is not one that will be solved quickly or easily. Even those in the investment community have serious doubts. The latest annual survey of mining companies by the Fraser Institute of Canada showed that 71 percent of respondents said the current level of "political stability" would discourage them from investing in mining exploration in the Philippines. A similar question regarding "security" found that 72 percent of respondents would be discouraged by perceived insecurity in the mining sector (Fraser Institute 2007).

In spite of these fears and the opposition of the Catholic Church, many NGOs, indigenous groups, and numerous communities, mining is likely to continue to increase in the Philippines. Investments are on the rise, especially from China, which has little or no experience in developing good community relations or meeting the social and economic expectations of affected mining communities. In March 2007, DENR Secretary Angelo Reyes said that projections show the Philippine mining industry on the verge of "…a major take-off in the next two to three years," with "an additional US$348 million expected to come in this year and about US$1.5 billion in 2008" (*Manila Bulletin* 2007). There is good reason to believe that increasing investment will mean increasing conflict. As long as a large gap continues to exist between the rhetoric and reality of responsible mining, mineral extraction in the Philippines will remain a double-edged sword.

VIII. RECOMMENDATIONS

Based on our findings, we make the following recommendations:

To the Government of the United States (USG):

1. Integrate USG policies with regard to mining in the Philippines to ensure that considerations of environmental protection, community benefits, and the potential for instability and conflict are duly weighed in relation to benefits from increased foreign investment and contribution to economic growth.

2. Add a third component to USAID's programs on environmental governance (along with illegal logging and fisheries) to include a concentrated focus on "the reduction of conflict in mining." Examples of possible approaches could be found in the work of the Environmental Law Institute, among others.

3. Build the capacity of barangays, municipalities, and provinces to make informed decisions about all aspects of mining, from exploration and feasibility studies to actual operations and mine closure issues. These capacity-building efforts should focus especially on indigenous regions across the country and on Muslim Mindanao. The training of barangay captains by Tanggol Kalikasan could serve as one possible model that could be adopted or replicated.

4. Strengthen efforts to assist the Government of the Philippines in becoming a signatory to and active participant in the Extractive Industries Transparency Initiative (EITI) as well as other international codes of conduct.

5. Support, in coordination with other donors and the private sector, the establishment of an independent and credible Center for Responsible Mining that would serve as a clearinghouse for information, a venue for multistakeholder dialogue, and a crisis response research and advisory body.

6. Support training aimed at strengthening corporate social responsibility in the mining sector. The Center for Social Responsibility at the University of Asia and the Pacific has done work that could serve as an initial basis for such training.

7. Use the International Visitor Program to sponsor a multistakeholder group on a 30-day tour across the U.S. to meet with counterparts to explore the theme of "achieving responsible mining."

8. Bring a series of experts on extractive industries and conflict from the United States and elsewhere for lecture tours and meetings with a broad spectrum of stakeholders.

9. Help to reduce the polarization over mining issues and "strengthen the middle" by sponsoring multistakeholder dialogues that bring together participants holding diverse but moderate points of view.

To the Government of the Philippines:

1. Increase the Social Development and Management Program (SDMP) minimum contribution from the current 1 percent of mining and milling costs to the equivalent of 4 percent of mining and milling costs. Those firms attempting to practice socially responsible mining in the Philippines are currently spending in the range of 4 percent to 6 percent of mining and milling costs or above.

2. Require sufficient trust funds from mining companies to ensure environmental safeguards and community benefits and to compensate for improper mining operations or unforeseen mining accidents.

3. Strengthen the Environmental Management Bureau (EMB) monitoring process with respect to such issues as mining tailings, waste rocks, and acid rock drainage. This strengthened effort should be funded by a direct levy on mining companies.

4. Increase the premiums and contributions required of mining companies for environmental safeguards. For example, this could include the Environmental Performance Bond (EPB); Environmental Pollution, Impairment, and Clean-up Liability Insurance (EPICLI); and the Final Mine Rehabilitation and/or Decommissioning Fund (FMRDF). These premiums should be determined by past company performance as evaluated by an independent rating system.

5. Strengthen efforts to encourage mining companies that wish to operate in the Philippines to adopt international codes of conduct and join international organizations that promote environmentally and socially responsible mining. Examples include:

   International Standards Organization 14001 (ISO 14001)
   International Cyanide Management Code (ICMC)
   Best Practice Environmental Management in Mining (BPEMM)

6. Require mining companies to provide an analysis of the projected social impact of their mining operations and contributions to community development. This analysis should include such areas as employment, income, health, and education.

7. Require mining companies to begin community development efforts in the exploration phase. Just as finding the ore body is a necessary technical prerequisite to ensuring commercial viability, creating trust and developing positive community relations is a necessary social investment in order to ensure successful mine operations.

8. Refrain from issuing mining licenses in conflict zones.

9. Make it the official policy of the Republic of the Philippines to join and become an active member of the Extractive Industries Transparency Initiative.

10. Take tangible steps to resolve all outstanding issues relating to abandoned or "legacy" mines throughout the Philippines. The remediation of abandoned mines is a prerequisite for establishing the credibility of claims of a new era of responsible mining.

11. Make renewed efforts to improve the environmental practices and living conditions of small-scale miners through support for more accessible permitting processes and the establishment of cooperatives wherever possible.

12. Restructure the Minerals Development Council to include participation from civil society, academia, the Catholic Bishops' Conference of the Philippines, and the Autonomous Region in Muslim Mindanao. In its current form, with the membership limited to 14 government officials and one private sector representative from the Philippine Chamber of Mines, the Minerals Development Council does not have public credibility.

13. Provide increased funding for the enforcement of all mining laws and provisions by the DENR, other relevant agencies, and LGUs. It should be recognized that effective enforcement and manageable levels of investment are related. When enforcement is weak, prudence requires that the vetting of prospective investors is more stringent. However, strong enforcement allows greater latitude in opening the mining sector to investors.

To Civil Society of the Philippines:

1. Improve public knowledge of mining by working with communities to assess the effects of current and future mining, ensuring that information is communicated or shared by the government and mining companies with the public-at-large, and enhancing the quality of public debate on mining by collecting and disseminating accurate and verifiable data.

2. Ensure the timely availability of reliable, independent information on the environmental effects of all aspects of mining through the establishment of cooperative agreements with distinguished universities and research centers, both domestic and foreign.

To the Private Sector of the Philippines:

1. Create positive demonstration effects to promote sustainable mining through tangible examples of successful, modestly sized operations that practice responsible mining.

2. Institute within the Chamber of Mines mechanisms for collective self-evaluation and self-policing with regard to member companies' environmental performance and contributions to community development. The costs of environmental irresponsibility and conflictive community relations on the part of one company are borne by all members. Peer pressure will reduce the likelihood of major accidents and improve the credibility of the industry.

Endnotes

[1] These included the closure of Atlas mine in 1994 due to financial difficulties, Marcopper mine in 1996 due to a disastrous tailings spill accident, Dizon mine in 1998 after a pit slide caused by a typhoon, Maricalum mine in 2001 as a result of both operational and financial problems, and the shift by Manila Mining and Lepanto Mining from copper to gold.
[2] The material presented here is derived from extensive ESAF interviews that FESS and the Croft Institute conducted in the Philippines in 2006.
[3] Ibid.
[4] Ibid.
[5] Ibid.
[6] Ibid.
[7] Ibid.
[8] The material presented here on TVI is derived from extensive on-site and community interviews in February 2006.
[9] The material presented here on Coral Bay Nickel Corporation is derived from extensive on-site and community interviews in February 2006.

APPENDIX I: ESAF NARRATIVE OUTLINE

Foundation for Environmental Security & Sustainability

Environmental Security Assessment Framework

PHASE I: Country Profile

OBJECTIVES

Generate an initial overview of the country to provide background and context for the assessment.

Develop a preliminary assessment of potential political, economic, and social cleavages that may contribute to instability and/or insecurity.

METHOD

1. Conduct preliminary research through data collection and literature reviews.

TASKS

a. Draft preliminary country profile, surveying the following areas:
   i. History
   ii. Polity (including World Bank governance indicators)
   iii. Economy
   iv. Society
   v. International/Regional Context
b. Compile an overview of U.S. and international aid (technical and material) by organization/agency.

PRODUCTS

(1) Preliminary country profile
(2) Matrix of international aid

For the purposes of its work, FESS uses the following definitions as a guide:

Environmental security is a condition in which a nation or region, through sound governance, capable management, and sustainable utilization of its natural resources and environment, takes effective steps toward creating social, economic, and political stability and ensuring the welfare of its population.

Environmental insecurity is a condition in which a nation or region fails to effectively govern, manage, and utilize its natural resources and environment, causing social, economic, or political instability that leads over time to heightened tensions, social turmoil, or conflict.

PHASE II: Analysis of Environmental Indicators

OBJECTIVES

Analyze three sets of environmentally linked data to focus the scope of the assessment.

Understand the linkages among economic, social, and environmental factors.

METHOD

1. DATA COLLECTION: Complete *environmental sustainability*, *econo-environmental*, and *socio-environmental* baseline data worksheets, by collecting baseline and trend data through data compilation, literature reviews, and interviews.

2. ANALYSIS: Perform enviro-sustainability, econo-environmental, and socio-environmental analyses to determine key aspects integral to economic and social stability.

Enviro-Sustainability: A condition in which a nation and/or region, through effective governance, accountable management, and sustainable utilization of its natural resources and environment meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Environmental sustainability does not imply absolute limits. It includes those limitations imposed by the present state of technology and social organization on natural resources and the ability of the environment to absorb the effects of human activity.

Econo-Environmental Analysis: An evaluation of economic activities that are dependent on the natural resource base of a country, such as agriculture and its use of land and water, extraction and refinement of minerals and fuels, exports of raw materials and other environmentally derived goods, power generation, production of finished commodities, and the use of the natural environment for subsistence living.

Socio-Environmental Analysis: An evaluation of a population's sustained and secure access to the necessary requirements for life. These factors are encompassed within livelihood security, food security, health, and education.

TASKS

a. Complete enviro-sustainability data baseline (e.g., land, energy, water).
b. Complete econo-environmental data baseline (e.g., PPP per capita, productive sectors, trade, labor).
c. Complete socio-environmental data baseline (e.g., food security, livelihoods, health).
d. Draft enviro-sustainability analysis.
e. Draft econo-environmental analysis.
f. Draft socio-environmental analysis.

PRODUCTS

(1) Enviro-sustainability baseline and analysis
(2) Socio-environmental baseline and analysis
(3) Econo-environmental baseline and analysis

PHASE III: Analysis of Critical Country Concerns

OBJECTIVES

Identify Critical Country Concerns (CCCs) and associated contributing factors and environmental linkages.

Understand which underlying issues, sectors, and resources are critical to stability. How are they critical? Who is affected when these are threatened? What are the potential consequences?

Assess environmental governance to examine its impact on CCCs in the context of natural resource management.

Critical Country Concerns: Underlying issues, sectors, and/or resources that may be directly or indirectly integral to stability, based on their value and significance to economic, political, and social well-being.

Environmental Governance: The traditions and institutions by which power, responsibility, and authority over a nation's natural resources are exercised.

METHOD

1. IDENTIFICATION: Through the analyses completed in phases I and II, determine the CCCs relevant to the country.

2. ANALYSIS: Perform analyses of each CCC to determine key aspects integral to economic, political, and social stability.

3. CONTEXT: Evaluate the impact of environmental governance on each CCC to understand its possible mitigating and/or exacerbating role.

TASKS

a. Complete list of CCCs.
b. Conduct data collection and literature reviews for each CCC.
c. Assess the strength and effectiveness of environmental governance for each CCC through an examination of:
    i) Existing legal and regulatory frameworks
    ii) Socio-cultural values
    iii) Political will
    iv) Institutional structure, capacity, and integrity
    v) Public access and local governance
    vi) Disaster preparedness and response capacity/mechanisms (where applicable)
d. Draft CCC analysis and related environmental governmental findings, including identification of contributing factors and the link to environmental security.

PRODUCTS

(1) CCC List
(2) CCC and Environmental Governance Analysis

PHASE IV: Identify Environmental Security Factors

OBJECTIVES

Further refine and focus the assessment by examining each Critical Country Concern to identify *Environmental Security Factors* (ESF) – those environmental problems and issues that pose a concern for stability or contribute to its creation.

Environmental Security Factor: An environmental problem that has significant implications for economic and social stability and welfare, which may pose a threat to security or contribute to its creation.

Identify mitigation efforts and preventive strategies already in place.

METHOD

1. Departing from the preceding assessment of the relative condition and vulnerability of the CCCs, assess security implications of the contributing factors to determine if the CCC qualifies as an Environmental Security Factor.

Environmental Security Factors Profile Worksheet *Complete for each CCC*			
Insert Name of CCC			
Contributing Factors	**Effects**	**Affected Stakeholders**	**Security Implications**

Environmental Security Factors Assessment	
CCC Evaluation	**Check Box as Appropriate**
Environmental Security Factor	
Environmental Problem Only	
Significant Non-Environmental Problem	

TASKS

a. Assess security implications of contributing factors to identify which CCCs are ESFs.
b. Profile problems and ESFs according to issues, primary causes, effects/security implications, and affected stakeholders.
c. Identify mitigation strategies reducing the effect of the ESFs.
d. Draft targeted question sets for identified ESFs.

PRODUCTS

(1) ESF profile
(2) List of mitigation efforts for each ESF

PHASE V: Field Test Hypotheses & Generate Scenarios

OBJECTIVE

Establish the relative significance of each Environmental Security Factor by developing potential crisis scenarios and possible outcomes.

METHOD

Test preliminary findings and hypotheses through field research.

Develop three scenarios through field research. One will project likely outcomes if trends remain relatively constant; the second will posit shocks to the system and project likely outcomes given the present capacity to respond; the third will describe potential outcomes if the country were to take many of the necessary steps to address identified environmental security threats. Each scenario will be evaluated in terms of probability and potential impact.

TASKS

a. Conduct in-country interviews.
b. Test preliminary hypotheses.
c. Formulate preliminary scenarios.

In consultation with the USAID mission, FESS will design and facilitate a *scenario development exercise*, when feasible, for U.S. government field staffs, implementers, and in-country counterparts to tap in-country experience and expertise to develop and test scenarios. The exercise would seek to provide benefits for all participants, including creating a participatory forum for expanding dialogue and opportunities to leverage available resources.

PRODUCTS

(1) Brief summary of initial environmental security findings and preliminary scenarios

PHASE VI: Review of U.S. Assistance

OBJECTIVE

Identify gaps and target areas to improve U.S. coordination and/or assistance.

METHOD

In the context of international assistance and local initiatives, review U.S. assistance strategies across agencies and assess their role and value in addressing environmental security problems.

TASKS

a. Review international aid matrix and local initiatives.
b. Compare U.S. assistance against potential scenarios and assess results.

PRODUCTS

(1) Evaluation of U.S. assistance with preliminary recommendations for improved coordination and/or targeted assistance

PHASE VII: Response Options & Recommendations

OBJECTIVE

Review and evaluate appropriate responses to the principal environmental security problems and propose alternate remedial actions.

Provide a comprehensive assessment and recommended actions to present options for policymakers and stakeholders to make informed decisions on environmental and resource problems.

METHOD

Consolidate ESAF findings and draft final report.

Develop recommendations that consider policy options, entertaining the full range of actions available to policymakers and stakeholders.

TASKS

a. Draft final report.
b. Develop recommendations.
c. Finalize scenarios.
d. Identify possible distribution formats and channels.

PRODUCTS

(1) Final report with annexes

APPENDIX II: PERSONS CONSULTED FOR THIS STUDY

1. Central Government, Republic of Philippines

Department of Environment and Natural Resources

1. Mr. Michael Defensor, Secretary (now Chief of Staff, Malacañang)
2. Mr. Diego Mapandi, Assistant Secretary for Muslim Affairs
3. Mr. Manuel D. Gerochi, Undersecretary for Lands
4. Mr. Ramon J.P. Paje, Undersecretary for Environment and Forestry
5. Mr. Deinrado Simon D. Dimalibot, Undersecretary for Mining and Legal Affairs
6. Mr. Casimiro Ynares, Assistant Secretary for Environment
7. Horacio Ramos, now Director, Mines and Geosciences Bureau
8. Mr. Joey E. Austria, Chief, Indigenous Community Affairs Division
9. Mr. Jeremias Dolino, Assistant Secretary for Visayas and Mindanao/former Director, Mines and Geosciences Bureau
10. Mr. Rex Monson
11. Mr. Vincente Tuddao
12. Mr. Maximo Dichoso
13. Mr. Michael Cabalda, Chief Science Research Specialist, Mining, Environment & Safety Division
14. Mr. Filemonitos S. Monteros, Sociologist (Surigao City)

Department of Energy

15. Mr. Victor Emmanuel A. Dato

Department of Health

16. Dr. Carmencita Banatin, Director III, Health Emergency Management Staff
17. Dr. Yolanda Oliveros, Director IV, National Center for Disease Prevention and Control
18. Dr. Virginia Ala**,** Director IV, Bureau of Internal Health Cooperation
19. Ms. Mayleen M. Beltran, Director IV, Health Policy Development & Planning Bureau

Department of Interior & Local Government

20. Angelo Reyes, Secretary (now Secretary, Department of Environment and Natural Resources)

Department National Mapping and Resource Information Authority

21. Ms. Linda SD. Papa, Director, Information Management

Department of Tourism

22. Mr. Rolando Cañizal, Director

Energy Policy and Planning Bureau

23. Ms. Elizabeth G. Navalta, Director

National Commission on Indigenous Peoples (NCIP)

24. Ms. Rosalina Bistoyong, Executive Director

National Anti-Poverty Commission

25. Mr. Juan Blenn I. Huelgas, Director, Basic Sector Unit
26. Mr. Bernie Cruz, Undersecretary

Office of Senator Aquilino Q. Pimentel, Jr.

27. Mr. Eleuterio Dumogho, Head, Local Government and Political Affairs

Office of Senator Mar Roxas

28. Senator Mar Roxas

Office of Civil Defense

29. Gen. Glenn J. Rabonza, Administrator and Executive Officer, National Disaster Coordinating Council

Philippines Embassy in Washington, D.C.

30. Col. Rolando Tenefrancia, Military Attaché

2. Local Government, Republic of Philippines

Albay Province

31. Hon. Fernando Garcia, Governor
32. Mr. Ronnie Victoria, Former Police Chief

Capiz Province

33. Hon. Victor Bermejo, Governor
34. Mr. Blas James G. Viterbo, Legal Counsel

Laguna Lake Development Authority

35. Mr. Jose K. Cariño III, Division Chief III, Community Development Division

Legazpi City

36. Hon. Noel E. Rosal, City Mayor

Misamis Oriental Province

37. Gov. Oscar Moreno

Palawan Province

38. Ms. Vicky T. de Guzman, Board Member, 2nd District

Palawan Council on Sustainable Development

39. Mr. Alex Marcaida, Information Officer
40. Ms. Aida Torres, Legal director
41. Mr. Danilo De Sagun Project Development Officer IV
42. Mr. Briccio Abela, Engineer, PDO III
43. Mr. Apollo Recalo Forester

Placer, Surigao del Norte

44. Hon. Felimon "Monching" Napuli, Mayor

Puerto Princesa City

45. Mayor Edward Hagedorn

Sorsogon Province

46. Mayor Benito Doma, Prieto Diaz
47. Mr. David Duran, City Councilor

Tubod, Surigao del Norte

48. Dr. Guilermo A. Romarete Jr., Mayor
49. Mr. Edelfredo Nalitan, Barangay Captain, Tiamana, Surigao del Norte
50. Mr. Porferio Bing, Barangay Official
51. Ms. Rosario Saga, Barangay Councilor
52. Ms. Marilyn S. Imboy, Barangay Official Committee on Finance
53. Mr. Cihalyn S. Amar, Barangay Treasurer
54. Ms. Elizabeth B. Biong, Barangay Secretary

3. Catholic Church

Cardinal of Manila

55. Archbishop Gaudencio Borbon Rosales

Social Action Center, Diocese of Legazpi

56. Mr. John B. Abejuro, Executive Assistant for Operations

Social Action Center, Diocese of Romblon

57. Bishop Arturo M. Bastes

4. Mining Companies/Private Sector

Benguet Corp

58. Mr. Perfecto Floresca Jr., Senior Mining Engineer, Claims Management Division

Bronzeoak Philippines Inc.

59. Mr. Jose Maria "Sech" P. Zabaleta Jr., Regional Director, Asia Pacific

Cagayan de Oro Chamber of Commerce

60. Mr. Ruben Vegafria, President

Chamber of Mines of Philippines

61. Ms. Nelia Halcon, Executive Vice President
62. Fr. Emeterio J. Barcelon, Trustee

Coral Bay Mining Corporation (Palawan HPP Project, Nickel, Bataraza, Palawan)

63. Mr. Takanori Fujimura, President
64. Mr. Arturo R. Manto, Chief Environmental Officer

Lepanto Consolidated Mining Co

65. Mr. A. C. "Gus" Villaluna, Senior Vice President & Resident Manager
66. Mr. Luc Edcardo, Environment and Social Management Division
67. Members of the Supervisors Union
68. Members of the Rank and File Union

Marcopper Mining Corporation (San Antonio Copper Project, Santa Cruz Marinduque)

69. Mr. Alberto O. Cuarteron, Special Assistant for Legal Assistant Corporate Secretary

Philex Mining Corporation (Padcal Expansion Project)

70. Mr. J. Ernesto C. Villaluna, President & COO
71. Mr. Eulalio B. Austin Jr., VP & Resident Manager
72. Mr. Victor Ma. A. Francisco, Manager, Corporate Environment and Community Relations
73. Ms. Redempta P. Baluda, Division Manager, Environment and Community Relations
74. Supervisors Union and Rank-and-File Union members at Philex Mining Corporation

Philex Mining Corporation (Boyongan Copper Project)

75. Mr. John Eludo, Community Relations Officer

Silangan Mindanao Mining Co (Boyongan Copper Projct, Tubod, Surigao del Norte)

76. Mr. Ed Realgar L. Oporto, Geologist

TVI Resource Development Phils., Inc. (Canatuan Gold Project, Gold, Siocon, Zamboanga del Norte)

77. Mr. E. Kennedy "Ed" Coronel, Director, Social Commitment
78. Mr. Dewayne Chambers, Manager Special Projects
79. Mr. Fidel J. Bontao, Environmental/Loss Control Manager
80. Mr. Virgilio Gonzales Luna, Proyectos, Knight Piesold Consulting
81. Mr. Jay Nelson, Manager, Environmental Protection
82. Mr. Victor F. Bagasao, Community Relations Manager
83. Ms. Lullie Micabalo, Community Development
84. Ms. Leila Compus, Human Resources and Development Manager
85. Mr. Erdulfo Comisas, Council of Elders Siocon Subanen Association Incorporated (SSAI)
86. Mr. Adolfo Dalman, Board Member, Siocon Subanen Association Incorporated (SSAI)

5. Academic/Research

Ateneo de Naga University

87. Prof. Emelina G. Regis, Institute for Environmental Conservation and Research (INECAR)
88. Dr. Emilyn Espiritu, Chair, Environmental Science Department
89. Dr. Fabian M. Dayrit, Dean/Prof, School of Science and Engineering/Dept of Chemistry
90. Dr. Maria Cecilia Macabuac, Researcher

Center for Social Policy and Public Affairs

91. Mr. Jose Magadia, SJ, Director

Environmental Science for Social Change Institute

92. Ms. Sylvia Miclat, Manager, Programs Development & Research Unit
93. Mr. Liesel Lim

Manila Observatory

94. Dr. Daniel MacNamara, SJ, Director

Philippine Council for Aquatic and Marine Resources and Development

95. Dr. Rafael D. Guerrero III, Executive Director

University of Asia and Pacific

96. Dr. Bernardo M. Villegas, Senior Vice President
97. Mr. Dionisio C. Papelleras, Jr., Executive Director, Center for Social Responsibility
98. Mr. Colin Legarde Hubo, Chair, IPD-Center for Social Responsibility Studies

University of the Philippines at Los Banõs

99. Atty. Eleno O. Peralta, Director, Forestry Development Center

100. Dr. Antonio Alcantara, Dean and Professor
School of Environmental Science and Management
101. Dr. Leni D. Camacho, Assistant Professor
Dept of Social Forestry and Forest Governance
College of Forestry and Natural Resources
102. Dr. Ramon Razal, Dean, College of Forestry and Natural Resources
103. Dr. Daylinda Banzaon-Cabanilla, Associate Professor, Anthropology

St. Scholastica College, Manila

104. Dr. Socorro E. Aguja, Faculty
105. Ms. Rhoda S. Tayag, Faculty
106. Ms. Evangeline B. Enriquez, Reseracher
107. Dr. Delia C. Navaza, Ed.D., Chair, Science Department
108. Ms. Teresita F. Religiosa, Consultant/Author & Coordinator of Science Books

Xavier University

109. Fr. Jose Ramon "Jett" Villarin, President
110. Dean Raul "Rocky" Villanueva, School of Law

6. Nongovernmental Organizations

ALAGAD NGO

111. Mr. Alberto "Toto" Malvar, Former Congressman, President

Asia Foundation

112. Atty. Carolyn A Mercado, Senior Program Officer
113. Mr. Wilfredo Torres III, Program Officer

Biodiversity and Sustainable Development

114. Mr. Julio Galvez Tan, Independent Consultant

CO Multiversity

115. Ms. Bing Constantino, Program Coordinator
116. Ms. Mimi Pimentel, CO Trainer

Community Based Forestry Management/Enterpriseworks Worldwide

117. Mr. Jaime Dagot

Conservation International, Philippines

118. Mr. Romeo B. Trono, Country Executive Director
119. Dr. Rowena Reyes-Boquiren, Socio-Economic and Policy Unit Leader

Cordillera People's Alliance

120. Ms. Joan U. Carling, Chairperson
121. Mr. Santos Mero
122. Mr. Markus Bangit
123. Ms. Rhoda Dalang

Environmental Legal Assistance Center (ELAC)

124. Atty. Gerthie Mayo-Anda, Assistant Executive Director

Foundation for a Sustainable Society, Inc.

125. Ms. Emma Lim-Sandrino, Executive Director
126. Mr. Toto Camba, Assistant Executive Director

Foundation for the Philippine Environment

127. Ms. Sylvia Mesina, Executive Director

Haribon Foundation

128. Ms. Anabelle E. Plantilla, Executive Director

InciteGov

129. Ms. Dinky Soliman, Former Social Welfare Secretary
130. Ms. Ging Deles, Former Presidential Adviser on the Peace Process

Legal Rights and Natural Resources Center (LRC) – Kasama sa Kalikasan

131. Ms. Jocelyn Villanueva, Executive Director
132. Mr. Lodel D. Magbanua, Team Leader, Policy Advocacy Team

Natripal

133. Mr. Artiso A. Mandawa
134. Ms. Mercedes L. Mediodia

Philippines Business for the Environment

135. Ms. Liza Antonio, Executive Director

Tanggol Kalikasan (Defense of Nature)

136. Atty. Asis G. Perez, Executive Director
137. Atty. Ipat Luna, Environmental Lawyer

Tebtebba Foundation

138. Ms. Victoria Tauli-Corpuz, Chairperson, UN Permanent Forum on Indigenous Issues (UNPFII)
139. Mr. Salvador Ramos

Tubod, Surigao del Norte

140. Mr. Dante Tado, TEACH (NGO)

World Resources Institute

141. Mr. Tony La Viña, Senior Fellow (now Dean, Ateneo School of Government, Ateneo de Manila)

World Wildlife Fund

142. Mr. Jose Ma. Lorenzo P. Tan, President

7. U.S. Government/International Organizations

Development Alternatives, Inc./USAID Eco-Governance Project

143. Dr. Ernesto Guiang, Chief of Party

UNDP

144. Ms. Amelia Supetran, Portfolio Manager , Environment Program

USAID

145. Mr. Jon Lindborg, Mission Director
146. Mr. Daniel C. Moore, Chief. Office of Energy and Environment
147. Ms. Mary Joy A. Jochico, Urban Environment Specialist, Office of Energy and Environment
148. Mr. Jerry Bisson, Chief, OEM, LAC
149. Ms. Mary Melnyk, Senior Natural Resources Advisor
150. Mr. Oliver O. Agoncillo, Advisor, Natural Resources Policy
151. Mr. Gerarado A. Porta, Sr Civic Participation Specialist, Office of Economic Development and Governance

U.S. Embassy, Manila

152. Mr. Josefo B. Tuyor, Operations Officer
153. Col. Mathias R. Velasco, Colonel, U.S. Army Joint Military Assistance Group

World Bank

154. Mr. Josefo B. Tuyor, Operations Officer
155. Ms. Idah Pswarayi-Riddihough, Lead Natural Resources Management Specialist

8. Other Individuals

156. Mr. Ernie Pelaez, Son of Former Vice President of the Philippines, Owner of forested areas used as carbon sink north of Cagayan de Oro

157. Mr. Victor Ramos, Former Secretary of DENR

158. Mr. Howie Severino, Journalist at GMA 7 Channel

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