



Is There a Future for Mining in the Philippines?

This policy brief is based on years of research and stakeholder discussions on natural resource governance and conflict management conducted by the Ateneo School of Government (ASoG). The School has taken every effort to gather empirical data and to understand the concerns of all stakeholders, before synthesizing ideas and formulating recommendations for this policy brief. Most recently, the School invited representatives from relevant sectors to an academic conference on November 22, 2011, to discuss these ideas and recommendations. The School acknowledges the inputs of the experts and stakeholders who greatly contributed to the refinement of this document.

The Ateneo School of Government is neither *for* nor *against* mining, *a priori*, because that would be against its principle of fostering the development of new ideas and approaches that bridge the gap between classroom wisdom and real-world policy decision-making and governance. However, the School does not shy away from taking a principled stand on issues, after rigorous examination of facts and engaging stakeholders with different perspectives in honest and candid discussions. Ultimately, this policy brief is not a consensus document, and ASoG is solely responsible for the views and contents presented.

This policy brief answers ten key questions related to mining and governance:

1. What is the nature of mining in the Philippines?
2. Why does mining generate conflicts?
3. Is mining beneficial to the country and to indigenous and local communities?
4. What are the real costs of doing mining in the Philippines?
5. How do we understand risks and conduct a cost-benefit analysis?
6. What is responsible mining, as applied to the Philippines?
7. What operational conditions must be met to conduct responsible mining in the Philippines?
8. What actions must the government take towards the management of responsible mining?
9. What interim measures must the government take while appropriate mining governance is instituted?
10. What is the future of mining in the Philippines?

I. What is the nature of mining in the Philippines?

The Philippines is a country rich in mineral resources that would be worth trillions of pesos if sold today (PhP47 trillion, according to a leader in the mining industry). These mineral resources are located within our lands or under our seas, both of which locations are also rich in other living or non-living resources that sustain economic activities such as farming, eco-tourism, and fishing. Mining operations necessarily involve the alteration of the land or seabed, such that people who use the land or sea for settlement and/or livelihood are likely to be displaced by mining operations. The lands where mineral resources are located may also have cultural or ecological values not easily measured in monetary terms.

The benefits derived from mining must balance its costs on people and the environment. Compensation for losses must be provided on top of the rightful share of the country and local people of the income from mineral wealth.

Minerals are non-renewable resources. Therefore, mining operations have a limited lifespan. The scale of alteration or disturbance resulting from mining operations (spatial and temporal) depends on the type of minerals, size of deposit, type of technology used, economic feasibility, and similar factors. The impacts on the environment and people, at any scale, depend on unique local factors: customary traditions and practices, uniqueness of natural ecosystems, risk of accidents brought by natural disasters, availability of livelihood alternatives, or the general ability of people and ecosystems to adjust to the scale of alteration or disturbance.

The extent of alteration or disturbance resulting from mining operations may be limited to the period of operations and controlled to minimize its adverse impacts. However, the impacts on the environment and on people generally last longer than the mining operations, and may or may not be reversible. The impacts of mining operations in the Philippines are magnified because their scale is large compared to the total area and population affected (often in small islands, with many communities living in the area intended for mining, with high risk of natural disasters). This is in contrast to the impact of mining operations in continental settings (e.g., Australia, Canada, the United States) where the size of mining operations is small compared to the vastness of the continent, with a sparse population and less diverse natural ecosystems.

Mining operations are either large-scale or small-scale, depending on the perspective of regulating the mining operator relative to the size of its operations. The policy criteria for categorizing small- versus large-scale mining do not always match the criteria for determining the scale of environmental impacts or economic benefits.

2. Why does mining generate conflicts?

The conflicts in mining generally relate to the following questions:

- Should mining prevail over current land-uses?
- Are the benefits from mining sufficient and fairly distributed?
- Are the social and environmental costs fully considered and compensated?
- Are the risks of adverse impacts reduced to a minimum and socially acceptable to those who bear them?
- When local stakeholders decide that the risks are unacceptable, can the national government override that decision based on broader criteria?
- Does small-scale mining provide more equitable access to resources? At what cost?

For each of these issues, the fundamental questions are: *Who has the right to decide? How are decisions made, and on what basis?* According to the current legal framework, the State decides these matters, acting as owner of the mineral resources and as protector of the interests of those who may be adversely affected. However, the State recognizes that stakeholders have the right to participate in decision-making and even to decide on some issues for themselves (e.g., free and prior informed consent [FPIC] of indigenous peoples). Since the right to decide is a matter of State recognition, there are also conflicts about how the State decides on who participates in decision-making, and to what extent their participation affects the final decision. The dynamics of “who decides” keep changing as policies change. *The net effect is the absence of stability and consistency in decision-making. Conflicts persist.*

How are decisions made, and on what basis? Conflicts about mining can only be resolved after examining the facts by answering: How many occupants are affected? How much production is there? How much water is needed? How much pollution is generated? What is the probability of adverse impacts? How many workers are employed? These facts are not readily available to those who have the responsibility to decide. Gathering and analyzing the data require experts' inputs and considerable time and money. Understanding these inputs and applying the knowledge to the decision-making process require a certain level of skill. The law places the burden of data generation and analysis on the mining applicant because the studies must relate to the applicant's proposed activities, and because of the considerable costs. This raises questions about the independence and credibility of the information and analysis.

The people tasked to decide or participate in decision-making have problems securing and effectively using reliable information because:

- Sources of information (e.g., experts) are not acceptable to all;
- Methods and/or outputs are insufficient or not fully relevant to the decision needed;
- Information is in a form that is not easily understood by stakeholders;
- Access to information is limited; and
- Information is unobtainable or unknowable given available resources.

The law requires experts to evaluate the data gathered and recommend actions to decision-makers or stakeholders. The quality of expert advice may vary considerably, thus decisions might be made based on inaccurate, insufficient or unreliable information – or not based on any data at all. Such decisions are then subject to challenge and reconsideration. *The net effect is unreliability of decision-making. Conflicts persist.*

When decisions and decision-making are inconsistent or unstable because of the lack of empirical bases, stakeholders tend to appeal to the highest power that can enforce a decision in their favor. This opens up venues for arbitrary decision-making based on factors other than facts. The problem is that decision-makers, even at the highest levels, change with every election. The incumbent may have a different appreciation of particular situations depending on his agenda and what sectors have more political influence. *The net effect is policy uncertainty and more conflicts.*

Box 1. Example of inconsistency in decision-making on land-use in Palawan

MacroAsia Corporation, the flagship of one of the country's most prominent business conglomerates, is applying for local permits to operate its 25-year lease awarded by the national government, on a property in the town of Brooke's Point that partly overlaps with a protected area on Mt. Mantalingahan. Two other mining companies – Ipilan Nickel Mining Corp. and Lebach Mining Corp. – are in earlier stages of mining project development, trying to secure all the local endorsements in order to proceed.

One of the contentious issues being raised about Mt. Mantalingahan is whether mining should be allowed in "core zone" areas or places where there are old-growth forests, which are protected under a special law – the Strategic Environmental Plan (SEP) for Palawan (Republic Act No. 7611). An initial review by the Palawan Council for Sustainable Development (PCSD), the regulatory agency for environmental concerns in the province, showed that all except 91 hectares of the area leased to MacroAsia are "core and restricted zones" protected under the SEP zoning system. The mining company maintains that its legal right to utilize the lease area has precedence over local laws, including the proclamation of Mantalingahan as a protected area.

There are different institutions responsible for making decisions that determine whether land is to be maintained as a protected area or opened for mining. The inconsistency in decisions, based on differing information on the status of land as a core zone and when mining rights are vested, fuels conflicts.

Box 2. Uncertain future of the Tampakan Copper-Gold Project

The Tampakan Project is expected to be the single biggest mining project in the country that could potentially double the current contribution of the sector to national gross domestic product (GDP). All eyes are on Tampakan and South Cotabato to see how decisions will be made on whether or not to allow the project to push through.

The Province of South Cotabato enacted a Provincial Environment Code that bans open-pit mining, which happens to be the method of choice for the Tampakan Project. The National Government, through Department of Interior and Local Government (DILG) Secretary Jesse Robredo is pressuring the province to reconsider the ban, asserting that the ban is inconsistent with national law.

From various interviews and public pronouncements, it appears that one of the main reasons behind the open-pit mining ban is that officials are not convinced the project will not cause harm to the environment and to local farmers. Former South Cotabato Governor Daisy Fuentes has publicly announced that the decision to ban open-pit mining was made as a precaution to protect farmers from potential water scarcity that can result from mining operations. On the other hand, the mining company claims that water quality and supply issues have been fully considered in its studies and assures the stakeholders that there will be no disruption of water supply for other uses.

Studies conducted by groups opposed to the project evince water, earthquake, and pollution risks, among other issues. MGB also raised three questions to SMI that have not been answered: the 2km-long tailings dam that the government is expected to maintain forever, the cutting of old growth forests and effect of water degradation and supply on agriculture.

The national government is insisting on a legalistic approach, which the province has vowed to face. Underneath the legal posturing are serious issues that cannot be resolved because of the lack of reliable information.

In the Fraser Institute Policy Potential Index (PPI) in 2010/2011, the Philippines ranked 66th out of 72 countries in conduciveness of policies to mining investments. The country ranked low despite fiscal and other incentives provided by the government to mining companies. Could this be due to the lingering uncertainty and conflicts associated with mining activities in the country?

Are all these conflicts over mining policies, decisions, and operations worth it? A look at the benefits and costs of mining may provide an answer.

3. Is mining beneficial to the country and to indigenous and local communities?

Mining operations bring jobs and infuse money into the local economy, and the mining sector contributes to economic growth in general. Even so, is any positive number in terms of job generation and economic growth always a good thing? How much incentive does the government give to the mining sector, which should be deducted from the net benefits to the country and local people? How much more (or less) can the government get if it considers alternative uses of the land? In other words, are Filipinos (as a people) really better off with mining, and is the government getting the best deal for its people? These are tough questions to answer because the researchers do not have the complete picture, due to the lack of data and a framework to analyze benefits as a whole. But there are known facts that can help in this analysis:

- a. *Contribution of mining sector to employment generation* – According to the Mines and Geosciences Bureau (MGB), the mining (and quarrying) sector's contribution to national total employment has always been below 1 percent (1%). Recent data has shown that it has been 0.5% since 2008 until 2010. So far, for the first half of 2011, contribution has been reported as 0.6% (in contrast to agriculture at 33% in 2011). All over the world, extractive mining is known as a low-

employment generating activity. The Tampakan project, with expected investments of \$5.9 billion, will provide only 2,000 permanent jobs.

- b. *Contribution of mining industry to growth in other sectors* – Habito (2010) observed that the mining sector has relatively low labor-output ratios in terms of employment generation. Labor compensation accounts for only 13.3% against an average of 20.7% in all sectors. The sector has a backward linkage index of only 0.46, meaning there is relatively little input from other domestic industries; even the forward linkage of 0.82 indicates that the sector is below average compared to all other sectors in generating further domestic economic activities. Minerals are being exported with little value-adding that could have generated further employment and industry linkage.
- c. *Contribution of mining to economic growth* – At the macro level, the contribution of mining to GDP has remained in the single digits. As of 2010, it only contributed 1.0%, with a Gross Value Added in Mining of PhP88.2 billion (MGB, 2011), compared to the agricultural sector’s contribution of 12% in 2010 (BAS, 2011). As for its contribution to total exports, export of minerals and mineral products has averaged 4.5% in the last four years and reporting 4.3% for the first half of 2011 (MGB, 2011). Total exports of non-metallic minerals’ share are even lower, hovering around 0.4% for the past 4 years (MGB, 2011) compared to agriculture at 8% for 2011. The manufacturing and service sector has always been the main driver of economic growth for the country comprising of over 50% of GDP (ADB, 2011).

However, the picture can be very different from the perspective of a project proponent. In the Tampakan Copper-Gold Project, Sagittarius Mines, Inc. (SMI) estimates that the project alone will contribute an additional 1% of national GDP, or an additional 10.4% of regional GDP for Regions XI and XII. It is difficult to access data for relative contribution of existing projects to local economic growth (at provincial and municipal levels), if data exists at all.

- d. *Inflow of foreign investments and outflow of profits* – The figures are not readily accessible to the public, but the government should be able to determine how much of the foreign funds that come in actually remains in the country to generate more jobs and economic activities. How quickly do the funds return to the foreign investors?

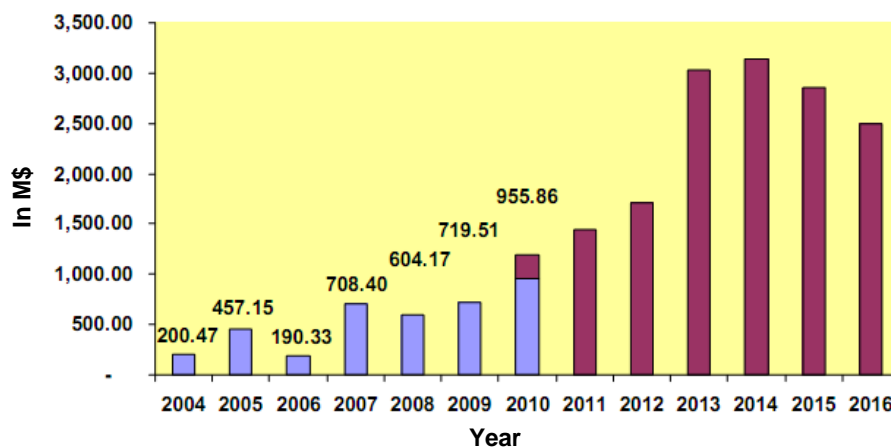


Figure 1. Total Mining Investment including forecasts that include seven development projects such as Tampakan Copper, Far Southeast Copper-Gold Project, Runruno Gold-Molybdenum Project, Didipio Copper-Gold, Boyungan Gold Project, Sumitomo Nickel Project and Kingking Copper Gold Project (MGB, 2011)

- e. *Revenues/taxes received by the government* – The amounts of taxes, fees and royalties from mining change from year to year and do not appear to show a trend.

Table 1. Taxes, Fees and Royalties from Mining (MGB, 2011)

	2007	2008	2009	2010	IH 2011
Taxes, Fees and Royalties from Mining					
<i>Fees, charges and royalties collected by DENR-MGB/LGUs</i>	774.0	557.4	369.2	800.6	383.8
<i>Excise Tax Collected by BIR</i>	942.1	660.3	718.8	1,299.7	
<i>Taxes Collected by National Government Agencies</i>	8,371.7	5,949.5	10,272.5	10,551.6	
<i>Taxes and Fees Collected by LGUs</i>	359.8	522.2	992.8	1,050.5	10.1
Total	10,447.6	7,689.4	12,380.3	13,702.4	393.9

*data in million pesos

There are other factors to consider in how much the government actually gets. It would seem that a tax holiday for Financial and Technical Assistance Agreements (FTAAs) and the 2% limit of government (excise) tax on Mineral Production and Sharing Agreements (MPSAs) translate to almost zero revenue for government. Bautista (2009) estimated that 19.60% to 29.74% of mining revenue accrues to government tax collection. Action for Economic Reforms (2009) calculated only a 7.5% effective tax rate in the industry (1997-2000). AER also cited that the government loses an average of 32% of revenues annually (1999-2004) because of incentive laws. Compared to other countries, the Philippines' effective tax rate is low. Deutsche Bank (2010) reported that effective tax rate for minerals in other countries are as follows: US (40%), Australia (38%), Brazil (38%), and Canada (23%).

In the Tampakan Project, SMI estimates that the project will produce a revenue stream of up to US\$37B (PhP1.85 trillion) over the life of the mine – US\$7 billion will go to government as taxes/duties/royalties and US\$2 billion will go to local governments and host communities. According to the Chamber of Mines, government already gets 41% of the mining firm's income before taxes, which is much higher compared to Africa (average 34.4%) or Latin America (average 39.5%).

- f. *Poverty incidence in mining areas* – There are a few studies that appear to associate poverty incidence with mining. It is difficult to make sweeping conclusions, but the data shows that provinces hosting mining operations do not necessarily demonstrate improvement in the lives of local people.

In a recent study by Balisacan (2011), the poverty incidence among individuals engaged in mining has continued to increase, compared to workers in other sectors. In 2006, income poverty in the sector was at 34.64 and by 2009 it increased to 48.71. The author also uses a multidimensional poverty index (MPI) that captures various dimensions of poverty (see Table 2). The mining sector also shows a high deprivation in health and education compared to other industries (see Table 3).

Table 2. MPI, H, A and Income Poverty by Sector, 2006 and 2009 (Balisacan, 2011)

Sector	2006					2009				
	MPI	H	A	Number of MPI Poor (in '000)	Income Poverty	MPI	H	A	Number of MPI Poor (in '000)	Income Poverty
Agriculture	0.313	0.603	0.519	17,819	47.84	0.281	0.552	0.509	16,246	47.92
Mining	0.291	0.562	0.518	228	34.64	0.278	0.553	0.503	261	48.71
Manufacturing	0.098	0.223	0.439	1,199	16.19	0.099	0.223	0.442	1,149	17.79
Utilities	0.023	0.062	0.369	23	7.44	0.031	0.074	0.414	32	3.23
Construction	0.155	0.351	0.443	2,089	25.19	0.134	0.305	0.440	1,961	24.52
Trade	0.093	0.216	0.429	2,130	13.87	0.075	0.175	0.427	1,734	13.12
Transpo & Comm	0.099	0.228	0.432	1,822	15.62	0.088	0.211	0.418	1,682	18.25
Finance	0.019	0.050	0.388	23	4.13	0.016	0.046	0.344	22	2.54
Services	0.074	0.171	0.436	1,944	12.41	0.065	0.153	0.426	1,989	11.94
Unemployed	0.077	0.174	0.440	2,171	12.65	0.067	0.153	0.442	2,147	12.83

Note: The table summarizes the estimates of multidimensional poverty index (MPI), multidimensional headcount (H), and average deprivation intensity experienced by the poor (A).

Table 3. Contributions of Dimensions per group

Sector	Health	Education	Standard of Living
Agriculture	36.6	20.2	43.2
Mining	37.0	21.8	41.2
Manufacturing	34.7	24.1	41.1
Utilities	29.5	28.4	42.2
Construction	35.7	21.8	42.5
Trade	35.2	23.3	41.4
Transportation	35.2	21.8	43.1
Finance	19.5	36.9	43.7
Services	34.6	24.3	41.1

The 2003 small area poverty incidence of National Statistical Coordination Board (NSCB) shows that Bataraza, Palawan, where Rio Tuba has been operating for 30, years has a poverty incidence that is twice the national rate, and is in the bottom 25% of municipalities on poverty incidence.

Some may argue that at the project level, mining operations can have a significant impact on the local community income from royalties and social benefits, which could lift families out of poverty. For the Tampakan Project, SMI expects royalty payments and social development contributions to reach US\$800 million to host indigenous and local communities.

There are no systematic studies to track the impact of the mining sector (as a whole or at a project level) to improving the lives of local communities. It is important to measure this economic impact especially after mining activities end.

g. *Improvement of health and education services in mining areas* – According to Bautista (2009), a paltry 0.11% to 0.26% (with gold mines at 1.23%) of mining revenues go to community development. How much of this goes to improving the health and education of local communities? Since these services are the responsibility of government, it is also important to know how much of the government's share from mining revenues has been put into improving basic services.

There are many reports of adverse health impacts associated with mining, both large- and small-scale (Sakoan, 2003; Drasch et al., 2001; Appleton, et al., 1999; 2006). These have shown poor health in communities mostly due to exposure to high levels of mercury, specifically in areas of small-scale mining. Even granting that these incidents are accidental or isolated instances, the health impacts of mining require accurately accounting for the improvement of health services together with the dangers to life and health.

The benefits that the country and local people can derive from mining have a limit in amount and in time period. A visit to a mining operation typically shows new roads and access to transportation, increased trade of goods and services supplied to the mining operations, even improved access to health centers and schools. These added benefits might be provided by the mining operator or the government, or made possible because of the presence of mining operations. Mining companies claim that there are huge economic and social benefits during mining operations, although there are no independent studies that measure the net benefits after accounting for the costs.

On the contrary, there is no dispute that there is little or no economic benefits after operations end. The sustainability of the benefits from mining depends on how the benefits will be allocated among the beneficiaries in the present and for the future. But, is there any municipality that shows significantly better quality of life than neighboring municipalities after mining has left?

Based on available verifiable information, it can be argued that the contribution of mining to the overall economy is small. The Philippine government does not appear to be getting the best deal for the people, especially compared to other countries with mining industries, and most of the benefits go to a very narrow set of beneficiaries. The researchers encourage the mining industry to provide verifiable information on benefits that are not considered here.

4. What are the real costs of doing mining in the Philippines?

As part of assuming the risk of adverse impacts, mining operators are required to set aside funds to compensate for damages. Mining operators may compensate the displacement of communities and economic losses from disturbance based on negotiations with affected stakeholders. Given that the same affected or at-risk stakeholders are also entitled to a share in mining revenues, there should be a net economic benefit to them apart from the costs of displacement, disturbance, or risk of damages.

Conflicts regarding costs are not only about measurable economic losses, but also about environmental and social costs that are either unknown or not measurable in monetary terms. The basic issue is: if these costs are unknown or not measurable, how can decision-makers make accurate cost-benefit decisions? If the environmental and social costs have no equivalent in money, are these costs then ignored? Or should decisions be suspended, pending a better appreciation of these costs? Who decides?

Over the past decade, valuation methods have been introduced to estimate the value of biodiversity and other ecosystem services. As applied to mining, environmental and social valuation is useful for

conducting cost-benefit analysis, damage assessment and compensation, regulatory analysis, land-use planning, and natural resource accounting, among others. There is no single valuation technique that can be applied to the Philippine mining sector, considering the diverse nature of the interactions between the economy, the environment, and human communities. Therefore, several techniques must be used in conjunction with one another in order to ensure that the worth of social and environmental health is not undervalued. These methods and results are at best complex and contested, and data-gathering has not been regular.

For instance, although information already exists that shows the financial value of negative environmental impacts due to mining, it is albeit incomplete and outdated. According to data from NSCB (2010), the cost of these negative environmental impacts steadily increased from 1992 to 1996. However, the data does not distinguish small-scale from large-scale mining.

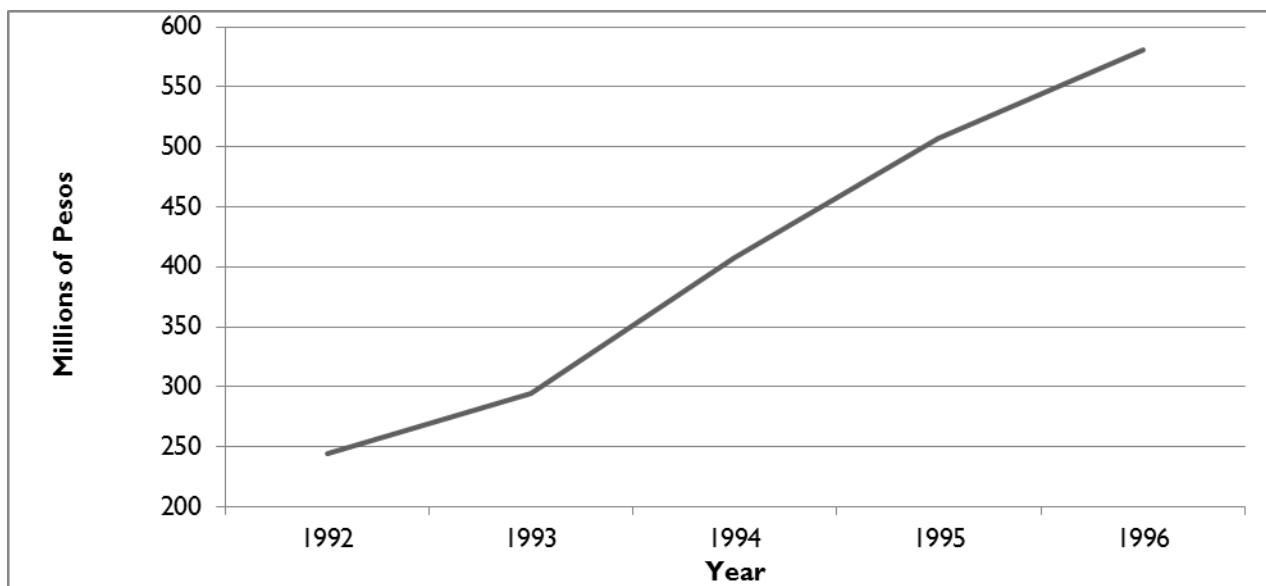


Figure 3. Cost of Negative Environmental Impacts of Mining (NSCB, 2010)

While determining the social value of a good or a service is complicated, there are several approaches that can be used to establish a reasonable figure. Examples of such methods include willingness to pay, measures of damages (lost wages, health care requirements due to injury or disease), and travel costs (Matthews and Lave, 2000).

One study done in the Philippines that weighed mining benefits against other land uses is the Samar Island Biodiversity (SAMBIO) Project in 2000. The Island is known for its extensive bauxite, copper, and nickel mines. One component of the study showed that total non-use value (i.e., to preserve resources) is around PHP54 million per year, revealing a significant willingness of Samar Island residents to pay to preserve its natural resources. The willingness to pay (WTP) value showed that resources can be equally or more valuable, and also likely to be as profitable as mining (through eco-tourism and non-timber products), with much less risk and uncertainties involved, making conservation a viable land-use option.

Valuation studies are few and limited. The Philippines does not have a system of measuring the value of ecosystems for services provide such as waste treatment and detoxification, nutrient dispersal and cycling, crop pollination, disease control, etc. – services that could be lost when natural ecosystems are

destroyed by mining operations. Mining operations directly cause the loss of these services, which must be compensated.

On social costs, how do decision-makers account for the changes in a people's way of life, their health and well-being, their personal and property rights, and the erosion of their cultural values brought about by the sudden wealth of individuals and communities? These are especially crucial questions as over half of the mining sites in the Philippines is found in socially vulnerable areas, including areas where conflict is ongoing, such as the island of Mindanao (Miranda, et al., 2003; AER, 2009). There is an undeniable and glaring conflict between mining activities and the culture and lifestyle of indigenous peoples (IPs). A UN report in 2007 concluded that in Benguet, Cordillera, the Kankanaey and Ibaloy who had been displaced from their ancestral lands and traditional livelihood have become illegal occupants in the area. Mining activities have occupied lands used to cultivate and raise livestock. This is a common trend in indigenous peoples' communities across the country.

Recent news reports highlight the security risks of mining operations, as with the reported attack by the New People's Army (NPA) on mining facilities in Surigao del Norte. The costs to the government of protecting mining companies from these risks represent the real costs of mining. The Philippine National Police and Armed Forces of the Philippines should have estimates of government expenditure to make mining operations secure.

In many coastal provinces, such as Negros Occidental and those along the Ilocos coastline, local governments and local communities are at risk of losing millions of pesos and are compelled to invest hundreds of work hours invested in protecting coastal ecosystem because the Mines and Geosciences Bureau (MGB) opened up the coastal areas for magnetite mining. Despite LGU opposition through resolutions and ordinances, MGB still entertains applications for sand mining that can destroy fisherfolks' livelihoods and marine habitats. Losses to government and community investments are not accounted for in the decision to allow coastal mining.

We are struggling with measuring the cost of environmental and social impacts in the present. We have no idea what the costs will be in the future. There are many unknown impacts, and unknown risks. It seems that we are doing no better than guesswork in assessing the real costs of mining.

Is this a responsible thing to do – to base decisions on guesswork? Should we exercise caution instead? How much benefit will we forego if we decide to exercise precaution? Can we afford to gamble our future for so little benefit that extends to so few? Can we afford the cost of conflicts that leave so many with ill feeling, which could prevent cooperation in more inclusive productive activities? *Unless we gain a better handle on the value of what we lose in exchange for mining, we have no rational basis for decision-making.*

5. How do we understand risks and conduct a cost-benefit analysis?

Like any other development activity done by man, mining has environmental, social, economic, cultural, and political impacts, both positive and negative. There are impacts that are certain: taxes, roads, increase in local economic activities, land disturbance, pollution, etc. There are impacts that may or may not happen. The probability of some of these uncertain impacts can be estimated, especially those that are within human control, such as the likelihood of dam breaking, or of pollution causing health problems.

However, there are impacts whose occurrence is not only uncertain, but whose probability (along with the extent of probable harm) is also unknown: the likelihood that extreme weather conditions can cause

a dam to break 100 years from now, or that pollution can cause species extinction. Calculations of probabilities and risks can be adjusted over time to consider new data and improved technology. Mitigating measures to prevent adverse impacts can also be improved based on more accurate calculations.

The complexity of analyzing risks, the lack of information relevant to risk assessment, or lack of access thereto, and the absence of accuracy and credibility of information, all add to the difficulty stakeholders face in making decisions now on what are the acceptable costs and risks of adverse impacts. Because of this difficulty, some stakeholders resort to emotional pleas and indirect attacks to win arguments:

- How many people will die should the dam break? One life is one too many – therefore, the proposed activity is unacceptable.
- Trust our experts because they stake their careers and reputations on their opinions.
- We do not care what your experts say, they are paid to support your position.

Is this a helpful way to frame the issue on acceptability of costs and of risks?

An analogy to air travel might be helpful: Air travel safety has undoubtedly improved with stricter regulations and advanced technology, yet there are more reports of accidents and loss of lives today than in the past because of the scale and amount of air travel undertaken today. The probability of death from an air crash is measurable with reasonable accuracy. But the reality is that lives and properties are lost every year. One life is one too many. There are alternatives to air travel with their own risks. Do we stop flying? How do we assess what is acceptable risk? In going on a flight, does one accept the risks (regardless of insurance and compensation schemes)?

How is this different from mining? Do people feel that they get the same personal benefit from mining as with flying? Do people feel that they will be personally affected by a mining disaster that could impact water, habitats, agricultural productivity, and realignment of public services? Unlike flying, the environmental effects of mining – even without the occurrence of disasters – affect bigger areas than the mining sites as well as more people, including future generations. It is a common observation that most of those opposed to mining operations live farther away from the mining site than those who support it. Do people feel that it is fair for them to bear the risks in return for what they perceive as personal costs and benefits? Different stakeholder groups will have different answers depending on how closely or remotely they feel the benefits and costs – therefore each group may decide differently, and all interests must be taken into account. However, *this situation assumes the stakeholders know and understand the level of risks and the magnitude of consequences.*

What if the probabilities and magnitude of harm are unknown? In our analogy with air travel, what if the causes of airplane crashes were unknown and there was insufficient data on design, manufacturing, safety, and maintenance on which to base the calculation of risks? Would we fly? Would the government allow airline companies to operate? We would not gamble our lives on the unknown risks of air travel. Why would we gamble on the unknown environmental and social risks of mining? This goes back to the issue of how much value we place on environmental and social costs for the purpose of assessing cost-benefit and risks.

Until we have a better handle on risks, is it reasonable and responsible to continue making decisions on mining applications?

6. What is responsible mining, as applied to the Philippines?

A simple operational answer is: responsible mining is complying with the laws that already take into account its environmental, social, economic, cultural, and other impacts. However, this assumes that the existing regulations are enough to safeguard the health of the environment and human communities, and that these come with effective mechanisms of implementation.

Republic Act No. 7942 or the Philippine Mining Act of 1995 declares that all Philippine mineral resources are owned by the State, which is responsible for the “rational exploration, development, utilization and conservation [of mineral resources] through the combined efforts of government and the private sector in order to enhance national growth in a way that effectively safeguards the environment and protect the rights of affected communities. “The law mandates several environmental and social work programs (i.e., the Environmental Work Program, the Environmental Protection and Enhancement Program, the Final Mine Rehabilitation/Decommissioning Plan and the Social Development and Management Program), as well as financial assurances (i.e., the Contingent Liability and Rehabilitation Fund, Mine Rehabilitation Fund, and Mine Wastes and Tailings Reserve Fund).

However, because of the unreliability and insufficiency of available monitoring data, it is still uncertain whether these mechanisms are enough and whether they are enforced effectively. There is still no definitive document from the government that clearly and specifically details the national expectation for responsible mining. Does the legal framework take into account the uncertainties detailed above, the uniqueness of Philippines as biodiversity-rich, the sensitivity of small islands, the situation in populated mining areas, risks from extreme weather, and so on? Is compliance with the law enough?

Responsible mining can also be measured using basic principles developed and adopted by ethical mining companies worldwide. The Philippine Chamber of Mines’ *Compliance and Beyond: A Guidebook on Corporate Social Responsibility for the Philippine Mining Industry* is the most comprehensive guidance on responsible mining in the country so far, which includes specific suggestions on how to adhere to responsible mining at every stage of the mining cycle. The following principles are the bases for the Guidebook:

- Protect the environment as a paramount consideration in all stages of mining and conduct activities in a manner that will contribute to the broader goals of sustainable development.
- Protect the rights of affected communities, including the rights of indigenous cultural communities. Engage in adequate and timely communication and consultation with them and work for the improvement of the quality of their lives during and even after the life of the mine.
- Safeguard the health and safety of mineworkers, local population, host and impact communities, and address foreseeable health- and safety-related impacts associated with mining over its full life cycle.
- Maintain a competent workforce that is committed to responsible mining and whose welfare is advanced. Make sure that affected communities benefit from mining through employment, whenever possible.
- Respect, protect, and promote human rights of those affected by mining and promote human rights-sensitive security arrangements.
- Adopt responsible corporate governance and management principles that nurture trust and promote company integrity by developing effective self-regulatory practices and management systems and employing business practices that are ethical, transparent and accountable. (Chamber of Mines, 2010)

In the Philippines, a special concern for responsible mining is the identification of “no-go” areas. Despite provisions in the law that identify areas closed to mining, field implementation has been beset by conflicts. There is no clear-cut policy on mining in island ecosystems that are most vulnerable to environmental and social impacts. The National Integrated Protected Areas System (NIPAS) and SEP for Palawan laws should inform such a policy. In 2000, DENR issued Administrative Order No. 83 on “Guidelines for the Management And Development of Small Islands, Including Its Coastal Areas” but this regulation has not stopped the exploitation of mineral resources in small islands and coastal areas.

7. What operational conditions must be met to conduct responsible mining in the Philippines?

Responsible mining has to accurately assess and account for all relevant costs and benefits:

- The appropriate valuation mechanisms should be employed to ensure that the environmental and social responsibilities are accounted for, and that the negative impacts are mitigated and affected communities compensated.
- There must be a more comprehensive articulation of risk assessment for disaster management, given that the Philippines is prone to geophysical disturbance and climate change-induced hazards.
- Regulations on environmental impact studies should be reviewed to account for the value of biodiversity and ethnodiversity significance.

Responsible mining has to respect no-go areas:

- There must be respect for the NIPAS and SEP for Palawan that declare areas closed to mining.
- There must be respect for the right of local governments to close areas within their territorial jurisdiction to mining operations as a precautionary measure, in the absence of credible information on impacts and acceptable risks.
- Small island ecosystems should be excluded from mining. Agenda 21 of the United Nations identifies small islands supporting small communities as special cases for environment and development, being ecologically fragile and vulnerable. The ocean and coastal environment of small islands of strategic importance and constitutes a valuable development resource. Their small size, limited resources, geographic dispersion and isolation from markets, place them at a disadvantage economically and prevent economies of scale.

Responsible mining has to respect the decision of local stakeholders, especially indigenous peoples:

- Inconsistencies in the implementation of FPIC raise serious doubts as to the validity of community consent and benefit-sharing agreements.
- The right of IPs and local communities to say “no” should be respected and not taken as a provisional decision subject to negotiation until communities finally say “yes.”

Small-scale mining should be held to the same high standards:

- Policies on small-scale mining should be revised to account for the same impacts as large-scale mining:

8. What actions must the government take towards management of responsible mining?

The operational conditions for responsible mining must be matched with governance actions, including:

- *Defining a policy to get the best deal for the people* –The country and local communities apparently get little in terms of benefits from mining, compared to the returns that investors get. The Philippine Development Plan (PDP) noted from an assessment report of a mining project (Rapu-Rapu) that the fair share of the government from mining has not been achieved due to the existing incentive mechanism (PDP, p. 297). The current fiscal incentives and taxation regime in mining are inadequate and do not assume long-term national and local benefits in the extraction of exhaustible resources. The government recently proposed the imposition of a 5% royalty for the exploitation of select mineral reservations. This has been met with stiff opposition by the mining industry. Comparative data on government benefits from mining are conflicting; therefore the government must make further studies to firm up its negotiating position.

In the landmark case of *La Bugal-B'laan Tribal Association vs. Ramos* (GR No. 127882, Jan 27, 2004), the Supreme Court ruled that the Mining Act of 1995 was constitutional provided it was implemented in a manner that truly benefited the country. The Court stated that the government retained control of mineral resources in the country through regulation. Thus, if the government and society at large do not benefit from the current mining revenue system, modifying that system is then justified.

- *Defining clear indicators for reforms* – Clear and measurable indicators are needed to track compliance and progress in reforms needed for responsible mining, including inclusiveness of economic benefits, as well as social, cultural, and environmental safeguards. The government needs to design and implement a systematic monitoring and evaluation (M & E) process based on these indicators.

There should be an objective, third-party review of current operating mines to determine compliance with responsible mining. A more comprehensive compilation of best practices should also be prepared to equip the government, mining companies, and affected communities with information to make rational decisions.

- *Continuous capacity building* – In order to support stable, rational decision-making, the government must have the capacity to implement:
 - Natural resources valuation;
 - Options for benefit-sharing schemes at the national, local, and community level;
 - Measuring local economic impact;
 - Measuring impact on community values and culture;
 - Establishing systematic monitoring and evaluation of environmental, social, and economic impacts at all levels (project, local, and national); and
 - A genuine and inclusive process of obtaining free and prior informed consent.

The Philippine Development Plan acknowledges that “government capacity for resource management is wanting” (p. 309) and that “Ensuring the equitable and just distribution of benefits from extracted mineral resources remains to be a challenge... Currently, there is no standard resource and environment valuation. There is a need to have a cost-benefit analysis and standard parameters that will consider all relevant values (including nonmarket values).” (p. 298)

Risk assessment should also be prioritized. The Philippines is located in the Pacific Ring of Fire. The same tectonic activity that makes it a prime location for economically valuable metals also means that the country is prone to geophysical hazards such as earthquakes and volcanic eruptions.

- *Setting a clear action plan with a reasonable timetable and sufficient budget and personnel support*—The actions needed must be set in a clear, doable, time-bound, and adequately funded action plan, so that all stakeholders can reasonably expect accomplishment of the reform goals. The reforms are only as good as their implementation. Government has to provide the manpower needed to implement the reforms both at national and local government levels.

For decades, the shortcomings in governance have been side-stepped, and the government has assumed that approval of mining operations can continue because capacity-building is taking place. This is no longer acceptable. As shown above, with the inadequacies of regulation and capacity for governance, the government has no rational basis for making decisions on mining.

9. What interim measures must the government take while appropriate mining governance is instituted?

In reassessing its mining policy, the government should adhere to the precautionary principle – a generally accepted international law principle – expressed by the Supreme Court in the Rules of Procedure for Environmental Cases (Part V, Rule 20):

Sec. 1. When there is a lack of full scientific certainty in establishing a causal link between human activity and environmental effect, the court shall apply the precautionary principle in resolving the case before it.

The constitutional right of the people to a balanced and healthful ecology shall be given the benefit of the doubt.

Sec. 2. In applying the precautionary principle, the following factors, among others, may be considered: (1) threats to human life or health; (2) inequity to present or future generations; (3) prejudice to the environment without legal consideration of the environmental rights of those affected.

Clearly, all the factors for the application of the precautionary principle to mining operations exist.

The government has suspended acceptance of all types of mining applications effective January this year. In Department of Environment and Natural Resources (DENR) Memorandum Order No. 2011-01, Secretary Ramon Paje indicated that DENR is undertaking a “cleansing” of mining applications, apparently to weed out defective applications and unqualified applicants. Recent news reports of disapprovals of mining applications (e.g., in Caraga Region) show that DENR is serious about the clean-up. Civil society groups, including Legal Rights and Natural Resources Center, Inc.- Kasama sa Kalikasan (LRC-KsK), contend that the suspension is not enough because the problems lie with existing tenements or with applications already being processed. LRC-KsK further claims that the suspension will eventually open up more lands for mining applications to replace the defective ones.

The Ateneo School of Government supports the position that the government impose a blanket moratorium that includes the suspension of processing of submitted mining applications, and not be limited to the cleansing of

dormant or defective applications. The fundamental uncertainties and gaps raised above call for the government to take pause and re-evaluate its mining policy. The current suspension is not effective in fixing fundamental problems, but will only serve to replace the actors. The same mining areas will be open for application once the unqualified or defective applications have been removed. If we do not know proper valuation, we cannot do rational cost-benefit analysis. If we cannot assess risks, we cannot make informed decisions acceptable to stakeholders.

The School is mindful that a moratorium can have adverse effects, especially on jobs and local economic activities in areas where mining activities are already starting— exploration, consultations, etc. – even though mining applications are still being processed. For this reason, a clear action plan and firm timeline is needed to accomplish the reforms for an improved governance framework for responsible mining.

Local governments that have expressed firm positions on mining have to be heard and their positions respected. Regardless of the legal technicalities that surround the enactment of ordinances deemed inconsistent with national law, local governments are simply expressing and applying the precautionary principle. The national government should continue to engage with local governments in evaluating compliance with the indicators of reforms for responsible mining and governance. Without doubt, local governments will appreciate such a joint problem-solving approach, and may reconsider their positions when compliance is assured. The national government may then lift the moratorium accordingly, on a per-area or -case basis, as soon as target actions have been completed and local governments and stakeholders give their support.

10. What is the future of mining in the Philippines?

We, the current generation, are potential beneficiaries of mining operations. But we must remain aware of our responsibility as caretakers of our nation’s wealth for the enjoyment of our children and their children. The country’s mineral resources are limited and exhaustible. Do we really have to pressure ourselves to cash in on the benefits now? The Ateneo School of Government’s position is that the country could wait for better conditions and negotiate better terms on the basis of better information. The consequences of erroneous decisions are so huge and irreversible that it is better to take a longer view today. The global economic outlook for the mining sector favors prudence and patience because demand for minerals will continue well into the future; thus there is no real opportunity cost in deferring decisions on utilization of our mineral resources.

This is not to say that we should not consider mining at all in the future. We can learn from existing mining operations to improve governance and work towards responsible mining. We recognize that the mining industry has improved a lot over the past decades in adopting new technologies, in considering the environmental, economic, social, and cultural impacts of mining operations. However, in our country, mining still has had to demonstrate what “responsible” mining is. And there is skepticism to overcome because, unfortunately for the industry, mining has a poor record of performance on the issue in the past 50 years. The action plan we propose is only the first step towards a responsible and sustainable governance environment for mining. We should put in place safeguards and governance framework to capture more of the values of our minerals for ourselves. The action plan we propose is only the first step towards a responsible and sustainable governance environment for mining.

FURTHER READINGS

- Action for Economic Reforms. 2009. An Economic Critique of the Mining Revitalization Plan. Unpublished Draft Report. Quezon City, Philippines.
- Appleton, J.D., JM Weeks, JPS Calvez, and C. Beinhoff. 2006. Impacts of Mercury Contaminated Mining Waste on Soil Quality, Crops, Bivalves, and Fish in the Naboc River Area, Mindanao, Philippines.
- Appleton, J.D., T.M. Williams, N. Breward, A. Apostol, J. Miguel and C. Miranda. 1999. Mercury Contamination Associated with Artisanal Gold Mining on the Island of Mindanao, the Philippines. *The Science of the Total Environment* 228: 95-109.
- Balisacan, Arcenio. 2011. Multidimensional Poverty in the Philippines: New Measures, Evidence, and Policy Implications.
- Bautista, Germelino. 2009. Economics of Philippine Mining: Rents, Price Cycles, Externalities, and Uncompensated Damages. Ateneo School of Government Publication. Ateneo de Manila University, Quezon City, Philippines.
- Bravante, M. & Holden, W. 2009. Going through the motions: the environmental impact assessment of nonferrous metals mining in the Philippines. *The Pacific Review*. 22(4): 523-547.
- Bureau of Agricultural Statistics. 2011. Agricultural Statistics. Internet Download. <http://countrystat.bas.gov.ph/>
- Cordillera Peoples' Alliance. 2007. Case Study on the Effects of Mining and Dams on the Environment and Indigenous Peoples in Benguet, Cordillera, Philippines..United Nations Report.
- Drasch, G., S. Bose-O'Reilly, C. Beinhoff, G. Roider and S. Maydl. 2001. The Mt. Diwata Study on the Philippines -1999: Assessing Mercury Intoxication of the Population by Small-scale Gold Mining. *The Science of the Total Environment* 267: 151-168.
- Habito, Cielito. 2010. An Agenda for High and Inclusive Growth in the Philippines. Asian Development Bank, Mandaluyong, Philippines.
- Matthews, H. Scott., Lave, Lester B. 2000. Applications of environmental valuation for determining externality cost. *Environmental Science and Technology*. 34:1390-1395.
- Mines and Geosciences Bureau. 2011. Mining Industry Statistics (release date 23 September 2011). Internet Download. <http://www.mgb.gov.ph/>
- National Statistical Coordination Board (NSCB) and United Nations Development Programme (UNDP). 2000. *Environmental Degradation due to Selected Economic Activities*. Last accessed: 25 November 2011. <http://www.nscb.gov.ph/peenra/Publications/Degradation/eco-act.pdf>
- National Statistical Coordination Board (NSCB). 2010. *The Philippine Statistical Yearbook (PSY)*. National Statistical Coordination Board. Makati, Philippines.
- Rosales, Rina and Herminia Francisco. 2000. Estimating Non-use Values of the Samar Island Forest Reserve. Samar Island Biodiversity Study (SAMBIO), REECS, Inc. Quezon City.

Sakoane, Malebabo. 2003. Occupational and Other Diseases in the Small-Scale Mining Sector. *In The Socio-Economic Impacts of Artisanal and Small-Scale Mining in Developing Countries*. Hilson, Gavin (editor); Swets and Zeitlinger B.V., Lisse, The Netherlands.