



# Metals mining and sustainable development in Central America

An assessment of benefits and costs




The current debate surrounding mining in Central America reveals a dangerous misunderstanding of the potential costs and benefits of aggressive development. Mining communities throughout the world know firsthand that those closest to mining development get hit hardest.

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 Residents of San Isidro (Cabañas, El Salvador) look out over a valley where a Canadian mining company hopes to begin mining gold and silver.  
*Jeff Deutsch / Oxfam America*

# Executive Summary

Despite its long history in Central America, mining has never played a significant role in the economies of Guatemala, Honduras, and El Salvador. Even if all the resources of these nations were developed, revenue from minerals would amount to only a small fraction of their broadly diversified economies.

What the mining industry could contribute to these countries must be balanced with the full scope of its costs. From a financial perspective, mining has some drawbacks:

- **Minerals commodity markets are highly volatile**, characterized by boom and bust cycles;
- **Modern open-pit mining creates relatively few jobs**—especially for those without very technical skills; and
- **The life cycles of open-pit mines are short**, offering a small window of opportunity for integration with local economies.

Meanwhile, large-scale open-pit mining poses environmental risks ranging from acid mine drainage to tailings dam leaks. Although some of the worst environmental outcomes are preventable, mining companies often ignore environmental rules—or circumvent them in nations with relatively high standards, such as the US.

Indeed, it is very possible that communities closest to a mining project will suffer—unless they have a voice in decisions for the project. For communities to be relevant in this process, they must be able to reject mining projects that are sufficiently detrimental to their welfare and development.

The current debate surrounding mining in the region, especially in El Salvador, reveals a dangerous misunderstanding of the potential costs and benefits of aggressive development. The World Bank and other institutions have conducted research that indicates that resource development often has a minimal impact on poverty alleviation efforts. Mining communities throughout the world know first-hand that those closest to mining development get hit the hardest.

If mining is to realize any of its promise, it must be done with the full sanction and support of local communities. The mining industry must respect local communities' right to free, prior, and informed consent. Furthermore, it must integrate tightly into local economies and allow for cooperative decision-making on a continuing basis. If these circumstances do not exist, communities have grounds to reject mining projects—because the costs will likely outweigh the benefits.

# Introduction

Since the Spanish colonization of Central America, commercial metal mining has been a part of the region's export economy. Mineral production, however, has never dominated the region's economies or its exports. On the contrary, low metal prices in the 1980s and 1990s led some metal-mining and processing operations, such as the International Nickel Company (Inco) operations in Guatemala, to shut down.

As mining activity declined, national economies became more diversified—leading the mining sectors of Central America to shrink in relative size. By 2005, mining represented less than 0.5 percent of gross domestic product (GDP) in El Salvador and Guatemala and only 1.5 percent in Honduras.

When mining company interest in Central American metal ores waned in the 1990s, the World Bank and other international financial institutions pushed governments to revise their laws with an eye toward making metal mining more profitable. This included reducing the royalties and taxes that mining companies should pay to national and local governments. Then, during the 2000s, metal commodity prices rose sharply, reviving mining company interests in Central American metals once again.

Today, a variety of metal-mining operations have been proposed or are in production in Central America. Simultaneously there is a growing awareness of the rights and proper decision-making role of communities near these projects. To date, community protests have delayed mining activities in Guatemala, prompted public scrutiny of exploration activities in El Salvador, and generated legislative reform in Honduras.

While mining companies and the governments that support new mining proposals have emphasized the national benefits created by mining, organized sectors of civil society are more concerned with the long-term costs and the role of communities in making decisions. This divide calls for an evaluation of the interests and proper roles of both sides. Mining development would benefit from the creation of space in the public discourse where stakeholders' interests can be reconciled.

This report evaluates the relative benefits and costs of mining in Central America, as well as the distribution of benefits and costs among the stakeholders. We will focus specifically on El Salvador, Guatemala, and Honduras, paying special attention to Pacific Rim Mining Corporation's El Dorado Mine in El Salvador, Goldcorp Inc.'s Marlin Mine in Guatemala, and Goldcorp's San Martin Mine in Honduras.

# A full economic view of mining: Incorporating all costs and benefits

## The mythology and romance of mining

Many mining industry advocates see no need to analyze the economics of a mineral development proposal. They present mineral deposits as concentrated wealth that would be irrational not to develop. These advocates believe the development of such mineral deposits will provide an intense, long-lasting infusion of export earnings and assure economic development that extends over many decades, even over a century.

As evidence, mining advocates claim that the experiences of now-wealthy, developed countries such as the US, Canada, and Australia demonstrate the pivotal, long-term role mining can play in generating wealth. Advocates also highlight more contemporary mining success stories from developing countries like Chile and Botswana. From this point of view, being critical or even skeptical of mining proposals is anti-economic, a form of economic irrationality.

## Getting economic: Introducing costs

Mining companies are already very mindful of costs. They do not seek to bring all mineral deposits into production—only those for which the expected commercial value of the ore exceeds the cost of extracting it. Because mining companies pay close attention to costs, most mineral deposits go undeveloped.

Communities and governments should also analyze costs when they consider a mining proposal. These stakeholders cannot rely on the evaluations of the mining companies, which may shift or externalize many of the costs onto other parties—workers, communities, and nations—in order to boost a project's net commercial benefits. Costs that may be shifted include the following:

- Significant, often permanent environmental damage;
- Major social and cultural costs; and
- Economic risks associated with unstable world markets and volatile metal prices.

Communities and nations must account for such shifted costs as they determine whether the public will benefit from a particular mining project. Communities have the same obligation to their residents that mining companies have to their stockholders to do such hard-nosed, critical, economic analysis before supporting a mining proposal.



## Paying attention to retails: The distribution of benefits and costs

It is not enough to compare public costs and benefits at the national level. Within the nation, benefits and costs may be distributed in a way that makes it difficult to see who shoulders the costs and who enjoys the benefits. While some communities and people may take a hard hit, other individuals and corporations may enjoy substantial windfalls.

Those with power and wealth have every incentive to shift costs onto the less powerful to enhance their own gain. For that reason, part of the economic analysis has to focus on the communities and populations most directly affected by the mining development to see how benefits and costs compare at that level.

## The economic value of the right to decide

The UN International Convention on the Elimination of All Forms of Racial Discrimination, the UN Declaration on the Rights of Indigenous Peoples, the International Labor Organization's Convention (No. 169) Concerning Indigenous and Tribal Peoples in Independent Countries, and related national legislation have put forth provisions that require the active, free, and meaningful participation of all individuals in achieving and enjoying the benefits of development.

▲ Indigenous Q'eq'chi people of the community of La Paz, Guatemala, say a prayer before a community meeting. La Paz is in a concession area granted to Skye Resources Inc., a Canadian nickel mining company, without the knowledge or consent of its inhabitants, a violation of Guatemala's 1996 Peace Accords and the International Labor Organization's Convention (No. 169) Concerning Indigenous and Tribal Peoples in Independent Countries, which Guatemala has signed and ratified. The 54 families living here are concerned they will be forced off their land by the mine company and government.

*Edgar Orellana / Oxfam America*

An accounting of the costs and benefits of large-scale mining would be incomplete without acknowledging the cost of disenfranchising local communities. Development projects that proceed without affected communities' informed consent rob communities of their right to be agents of their own development. At the same time, they expose other stakeholders to investment risks such as possible local resistance and conflict.

Just as mining companies carefully choose which deposits to develop and what technologies to use to assure profitability, communities and nations must do the same to assure *public* net benefits.

### The curse of natural resource abundance

In general, specialization in mineral development has not brought sustained prosperity to workers, communities, or nations. With some unique exceptions, nations specializing in mineral production have experienced significantly slower rates of economic growth than other nations over the last quarter-century.

Over a longer period, we can see that mineral extraction played only a very limited role in the development of wealthy nations such as the US, Australia, and Canada. Within those nations, mining communities have been plagued by high economic insecurity, unemployment, loss of population, and poverty.

Indeed, mining does not “obviously” or necessarily generate benefits that exceed costs for nations or communities. We will discuss reasons why mineral development has often failed to support economic development in greater detail later in this report.

### The need for strong public policy regulating mineral development

This report does *not* aim for the wholesale rejection of mining proposals. Just as mining companies carefully choose which deposits to develop and what technologies to use to assure profitability, communities and nations must do the same to assure *public* net benefits.

Public policy must guide mineral developments to appropriate sites, to the use of appropriate technologies, and to an appropriate sharing of the benefits and costs. And it must permit local communities to reject mining proposals when these and other criteria are not met. If public policy is well conceived, planned, and administered—and if local communities have the right to reject proposed mines—mining communities stand a better chance of seeing net benefits rather than net losses.



# The role of metal mining in the Central American economies

The economies of Guatemala, Honduras, and El Salvador accelerated in growth between 2004 and 2006. GDP growth rates have risen 50 to 70 percent as economies recovered from the worldwide economic slowdown of the early 2000s. Metal mining has not played a significant role in this expansion.

On the contrary, mining has been only a tiny—and shrinking—contributor to total economic production. As of 2006, “mining and quarrying”—which includes metal mining and the development of fossil fuels, sand, gravel, cement, and other nonmetal resources—represented less than 0.4 percent of GDP in El Salvador, less than 0.6 percent of GDP in Guatemala, and about 1.5 percent of GDP in Honduras.<sup>1</sup>

Because metal mining was an important economic objective during the colonial period and early nationhood in Central America, the importance of mineral development to the region’s economic development today is often exaggerated. Consider that:

- In the 1880s, Honduras received about 55 percent of its export earnings from silver mined at the El Mochito Mine. But by the early 1990s, total mineral exports amounted to less than 2 percent of GDP and less than 0.3 percent of employment in Honduras.<sup>2</sup> That contribution is even lower today.
- In Guatemala, Inco began operating its large Exmibal Nickel Mine in 1971. But by the time the mine closed in 1980, it employed only 800 workers<sup>3</sup>—a mere 0.4 percent of Guatemalan workers at that time.
- In El Salvador, metal mining made a minor contribution to the economy in the late 19th and early 20th centuries when Charles Butters—who pioneered the cyanide process for gold extraction—opened several gold mines. Some of those mines continued to be highly productive until gold prices plummeted in the 1930s and most operations were shut down.<sup>4</sup>

Compared with other sources of economic productivity in these countries, mining is clearly of minor importance. In Honduras, manufacturing generates more than 11 times as much economic value as mining. And in El Salvador and Guatemala, manufacturing is, respectively, about 50 and 38 times more important than mining (see Table 1).

As a source of foreign exchange, mining is also relatively minor. For all three countries, remittances from family members who have emigrated to other countries, mostly to the US, are the dominant source of foreign exchange. In Guatemala and Honduras, remittances nearly equaled the total value of all exports in 2004.



**Table 1. Percentage importance of economic sectors: % of GDP, 2006**

Source: Latin America and the Caribbean Statistics, CEPALSTAT, Economic Commission for Latin America and the Caribbean, <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>

Economic sector	El Salvador (percent)	Guatemala (percent)	Honduras (percent)
Mining	0.4	0.5	1.5
Agriculture	9.0	13.7	13.7
Manufacturing	21.4	19.1	17.5
Public utilities & construction	14.8	14.7	13.3
Services	54.5	52.0	53.9

In El Salvador, those remittances were 70 percent larger than all export earnings. If all of the minerals extracted from these countries were exported, remittances would still exceed foreign exchange from mining by 20 times in Honduras, 30 times in Guatemala, and 60 times in El Salvador.

Indeed, mining could increase in size many times over, and it would still represent a minor part of the overall economy in these countries. In that sense, it seems unlikely mining will ever play a major role in their development.

Thus, national governments are less justified in ignoring or overriding local communities' opposition to proposed mining projects. When local populations oppose mining projects, they clearly believe that the local costs outweigh the benefits. National governments can only justify overriding the local opposition on the grounds that the entire nation will benefit—and the local area must be an unfortunate sacrifice.

▲  
Lake Izabal, in eastern Guatemala, is a spectacular natural resource that has mineral deposits along its northern shore. Although the lake is an environmentally sensitive area, the government and foreign mining companies are intent on developing nickel deposits near the lake, which could displace small-scale and indigenous farmers and fishing families that rely on the natural resources to earn a living.

*Edgar Orellana / Oxfam America*

# Central America's experience with metal mining

## Coping with unstable metal prices<sup>5</sup>

The difficulties of sustaining nickel mining in Guatemala are indicative of the problems facing all countries relying on metal mining—and underscore one of the reasons metal mining rarely contributes to sustainable economic development: unstable metal prices.

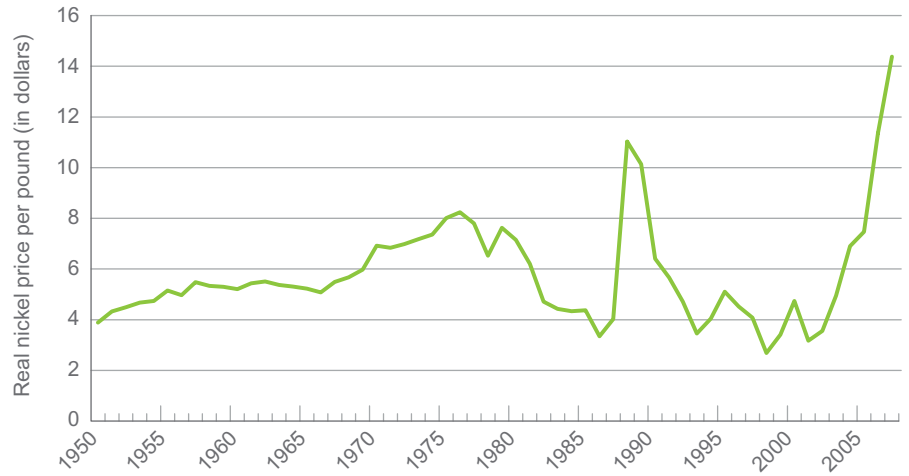
The Exmibal Mine began operating in 1971 when nickel prices were rising to new highs, as adjusted for inflation. But by the late 1970s, real nickel prices began to tumble from a high of \$8.34 per pound in 1976 to a low of \$3.24 in 1986. The mine, like many nickel mines around the world, shut down.

Real nickel prices rebounded spectacularly in 1988, more than tripling to more than \$11 only to quickly tumble back down again to \$3.45 by 1993. They eventually fell to \$2.68 in 1998—a quarter of what the price had been 10 years earlier (see Figure 1). Since then, nickel prices have again skyrocketed to record highs, reaching \$24 in April of 2007 only to fall to \$12 by August of that year (see Figure 2).

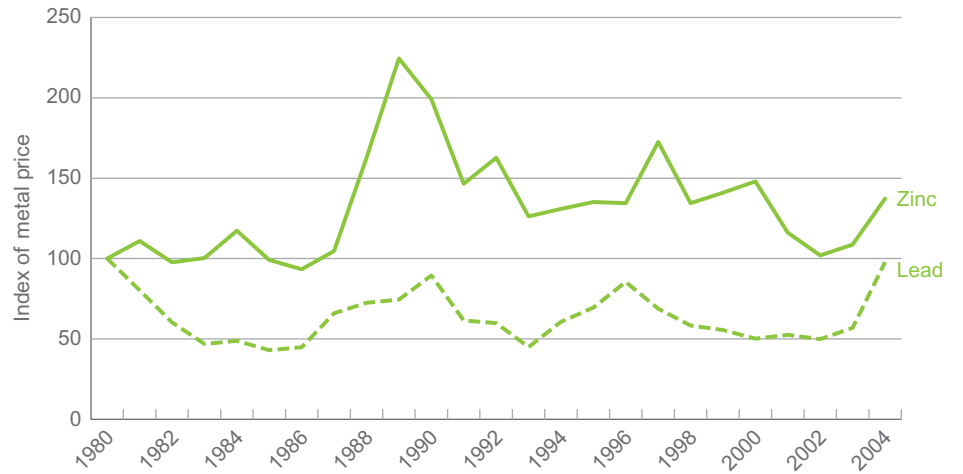
These volatile prices are not unique to nickel. The fluctuations in lead and zinc prices over the last quarter-century follow a similar pattern: repeated cycles of rising prices followed by falling prices (see Figure 2).

Today, gold mining is currently the primary thrust of mineral development in El Salvador, Guatemala, and Honduras. Gold prices have also fluctuated widely, leading to a gold boom in the 1970s, a gold bust in the 1980s and the late 1990s, and now another boom of uncertain duration (see Figure 3).

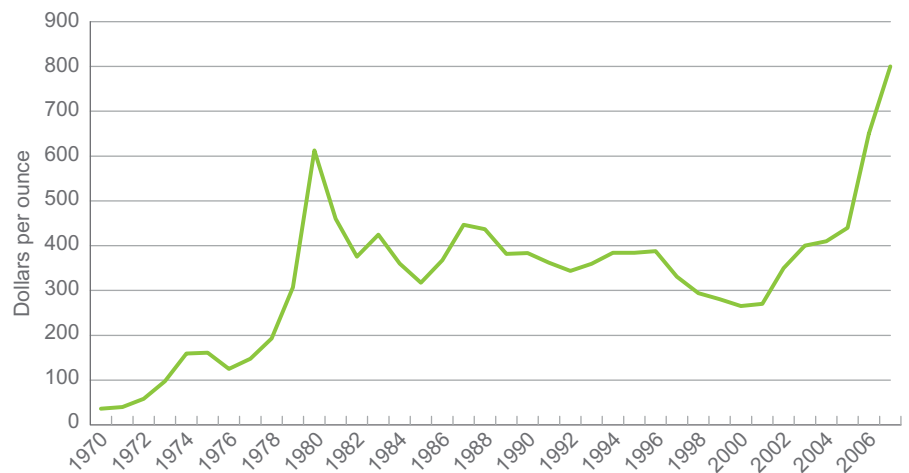
**Figure 1. Changes in real nickel prices (1950–2007)**



**Figure 2. Indexes of nominal lead and zinc prices (1980–2004)**



**Figure 3. Changes in gold price (nominal, 1970–2007)**



## The duration of mining projects

Mining removes a nonrenewable resource from the ground. Extraction ultimately exhausts a mineral deposit, and the mine is shut down. Given the environmental and social costs of mining, how long the potential benefits will endure is an important determinant of the likely net benefits.

In the past, some mineral deposits have been commercially exploited for more than a century. In North America, the copper deposits in Butte, MT, Silver City, NM, and Globe-Miami, AZ, have been mined since the late 19th century. Other precious metal mines in Lead, SD, and Kellogg, ID, were also in production for a century. This is not to say that there were not disruptions caused by low metal prices and strikes or that employment was stable. But historically, many metal mines have operated for a very long time.

New mining technologies combined with global financial pressures to quickly recover investments have led to mining projects of much shorter duration, often eight to 15 years. In turn, mining companies want to minimize the infrastructure that has to be put in place to support the workforce. In the US, Canada, and Australia, some mining operations have adopted a “fly in, fly out” or “commute in, commute out” approach so that permanent residential accommodations and infrastructure are not necessary at the mine site.

Here are three current examples of short-duration metal mines:

- Goldcorp’s San Martin Gold Mine in Honduras opened in 2001. It exhausted one of its open pits in 2006, and reclamation efforts there were well underway in 2007. Another pit was scheduled to be shut down in mid-2007, and the final small pit was to be closed by the end of 2007—for a mine duration of seven years. Reclamation activities and the processing of ore already removed from the pits will continue through the end of 2009. Including those activities, the mining operation will have lasted nine years.<sup>6</sup>
- Goldcorp’s Marlin Gold Mine in Guatemala began production in late 2005 at a level several times larger than San Martin. Goldcorp expects to continue production at Marlin through 2015, giving it a projected 10-year duration.<sup>7</sup>
- Pacific Rim has applied for an exploitation permit for its El Dorado Mine in El Salvador. The mining company issued a pre-feasibility study in January 2005, which projected that, at the rate it hoped to mine its known deposits, the mining would last 6.2 years based on the “proven” and “probable” resource. In July 2006, Pacific Rim updated its resource estimate. Including the “measured,” “indicated,” and “inferred” resources, the total resource estimate was about double Pacific Rim’s earlier estimate—but less certain.<sup>8</sup> If the new resource estimate is confirmed, the life of the mine should double. However, Pacific Rim has increased its target level of annual production by 2.5 times, which means the larger resource will not necessarily extend the life of the mine beyond six years.<sup>9</sup>

Of course, the life of a mining operation is not dictated only by the economic and geological information at the time the mine opens. As mining and exploration proceed, new resources may be discovered that extend the life of the mine. In addition,

metal prices may turn out to be higher than those assumed in the feasibility analysis, making the mining and processing of higher cost and/or lower grade ores feasible.

The opposite can also happen. Metal prices can decline and/or the cost and quality of the ore may turn out to be less advantageous than expected. Cost increases for crucial inputs—energy, labor, materials, and equipment—could also threaten a mine's viability.

For example, Inco's large Exmibal Nickel Mine in Guatemala (see page 7) opened in 1971, but closed in the early 1980s because of low nickel prices and the high cost of fuel.<sup>10</sup> The construction camp, residential village, power plant, and processing facilities were mothballed. The mine laid off 800 workers, and the adjacent town—which had grown from a population of 1,000 to 10,000—began to shrink. Inco wrote off the entire \$220 million cost of the project.<sup>11</sup> Twenty-five years later, that proven mineral deposit has yet to return to production.

As will be discussed below, the construction and operation of a mine often involves the displacement of the neighboring population; the in-migration of many outsiders, possibly of different ethnic or cultural backgrounds, into the local community; the creation of significant differences in income and wealth; and serious environmental damage, some of a permanent nature. The justification for those costs comes from the benefits associated with mineral production. But when mineral production is potentially of short duration, it is questionable whether the benefits justify the costs and whether that mining project actually supports long-term development.

▼  
Mineral processing facility on the shore of Lake Izabal, Guatemala. This mine site has been idle since the 1980s. Skye Resources bought the nickel mine concession and plant from Inco and is getting ready to start mining as soon as it can get financing. At the urging of local environmentalists, the company was denied a permit to transport ore by barge across the lake, and will have to do so by truck along existing roads.

*Edgar Orellana / Oxfam America*



## Local conflicts over mining in Central America

Proposed and active metal mining has led to various opposition activities in Central America in recent years—but this is not just a recent phenomenon.

When the Guatemalan government granted a mineral concession to Inco's Exmibal Mine in Guatemala in 1965, it deployed its army to remove peasants from the land. This provoked a peasant rebellion in the hills around the mining company's facilities. The government responded with a bloody pacification campaign—including death squads that killed academics and lawyers who were critical of the mine because of suspected corruption. In a sense, proposed mining was one of the foci of Guatemala's long civil war.

Decades later, the indigenous peoples who reinhabited the area surrounding Exmibal after mining was abandoned are being evicted again to make way for renewed exploration and possible reopening of the mine. This has restarted conflict between local indigenous people and the Canadian mining company Syke Resources—which is supported by the army and the national police.

In 2005, mining interests in Guatemala reported that anti-mining demonstrations were discouraging investment in the sector. Some of these demonstrations targeted production and exploration operations at Goldcorp's Marlin Mine.<sup>12</sup> At one point, demonstrators blocked the delivery of mining machinery to the site for 40 days until the national police and army broke the blockade in early 2005, killing one person and injuring many.

Local opposition to metal mining is playing out in other ways in Guatemala. Because mining companies have to purchase the surface rights to the land over a mineral deposit before the land can be mined, some local communities have seized the role of gatekeepers of their regions. In 2006, Guatemala's deputy mining minister observed that "local opposition has reduced the number of licenses for metal exploration in the country from 740 to 315 just in the past two years."<sup>13</sup>

El Salvador is also experiencing local opposition to metal mining. Here, limited metal mining is currently underway, but several mines have been proposed or are being explored. Commerce Group Corporation's San Sebastian Gold Mine is the only operating gold mine. Commerce had plans to expand into a new area, but the Ministry of Environment and Natural Resources revoked two environmental permits for the proposed project in 2006. Commerce has appealed that decision to El Salvador's supreme court.<sup>14</sup>

In 2007, the Ministry of Environment and Natural Resources also delayed granting permits for the proposed El Pescadito Gold and Silver Mine. This marks a turn for the ministry, which had previously issued exploration permits for the Pacific Rim project despite opposition from local residents and environmental groups. In late 2006, protests at the site of the proposed Santa Rita Mine led Pacific Rim to suspend exploratory drilling while it negotiated with the protestors. Local residents have been resisting mining proposals by refusing to sell their surface rights to the mining companies. Meanwhile, a national group, the National Coalition on Metallic Mining (Mesa Nacional Frente a la Minería Metallica), has proposed mining law reform that would ban metal mining altogether.



▲  
Farmworker waters cattle near Texistepeque, El Salvador. With water already so scarce for farmers in El Salvador, many are concerned that the benefits of mining will not outweigh the costs in terms of access to clean water for livestock, as well as for human consumption.

*Edgar Orellana / Oxfam America*

Honduras is actually several steps closer to placing a legal ban on metal mining. In 2004, the government suspended grants for any new mineral concession licenses until national mining laws could be changed. Initially, the government planned to introduce a higher royalty rate on mine production and new regulations controlling operations. Then the new government elected in 2005 advocated to include a ban on all open-pit mining for gold and silver. Mining interests said that such a move would basically eliminate any further foreign direct investment in exploration or development of new mining projects in Honduras.<sup>15</sup> Given that Honduras is the Central American nation in which mining plays the greatest (although modest) economic role, Honduras's efforts to pause and carefully consider the role that metal mining should play in the nation's economy is important.

The level and intensity of the resistance to metal mining in these three Central American nations demonstrates that local communities have judged the costs of mining projects to exceed the local benefits. Mining companies and national governments continue to be unable or unwilling to involve local communities and citizens effectively in the decision making about mining proposals. Meanwhile, local conflict adds to the economic costs of mining, pushing those costs even further beyond what local benefits would justify.



# Exaggerating the benefits of mining: Treasure for the taking?

In the popular economic dialogue on mining, it is simply assumed that mining produces vast wealth. The image of concentrated wealth in a relatively small geographic area is often likened to the discovery of a “buried treasure.” Given that enormous wealth, it seems obvious to advocates to use mining to recover that treasure. Such advocates see it as irrational and an economic travesty not to tap into that mineral wealth. A 2007 study by Manuel E. Hinds, El Salvador’s former minister of finance and current economic adviser to Pacific Rim, sums it up this way:<sup>16</sup>

Since time immemorial, gold has been a standard and symbol of richness. In almost all languages, a sudden stroke of financial success is described as “striking gold.” Around the world the discovery of gold is considered good news, and it is assumed that gold deposits will be mined.

Hinds’s defense of gold mining in El Salvador concludes that “there are very few projects that could generate a wealth as immense as gold could in El Salvador.”<sup>17</sup> He also says:

Given the enormous potential benefits of mining, and the modern technologies that reduce environmental risks, renouncing gold mining would be unjustifiable and globally unprecedented.<sup>18</sup>

If this conventional wisdom were correct, the ongoing debate, the continuing popular protests, and the hesitancy of governments to embrace metal mining in Central America would be incomprehensible.

Likewise, the debate within international financial institutions about how advisable it is to invest in mineral development in developing countries is simply inexplicable if mining *always* produces substantial wealth for the countries where mining takes place. In recent years, international studies have been published with titles such as the following:

- “Treasure or Trouble? Mining in Developing Countries”<sup>19</sup>
- “Natural Resources: A Blessing or a Curse?”<sup>20</sup>
- “Resource Impact: A Curse or a Blessing?”<sup>21</sup>
- “The Curse of Natural Resources”<sup>22</sup>
- “Oil Windfalls: Blessing or Curse?”<sup>23</sup>

Clearly these international economic analyses do not see natural resource development as a simple and certain way for developing countries to derive substantial and sustained net benefits. Despite the conventional view of mineral deposits as easy treasure, mining is actually a complex and risky undertaking in the context of sustained development.

As a practical matter, mining companies know that the buried-treasure view of mineral deposits is misleading because it ignores the costs associated with finding, developing, extracting, processing, and refining the minerals. Most mineral deposits, including gold ore deposits, *never* get developed because those costs exceed the market value of the refined mineral. Mining companies carefully analyze deposits and only develop the lowest cost ones, choosing *not* to mine most deposits because the costs are too high.

## Exaggerating the benefits

The commercial benefit of gold extraction is not measured by the market value of gold, but by the extent to which that market value exceeds the costs of discovery, extraction, and refining.

### Ignoring mining costs

Mining advocates sometimes discourage critical analysis of mining proposals by trumpeting the spectacular wealth they claim any mine can produce. Too often, they ignore the costs associated with mining and focus only on the market value of the *refined* mineral such as gold.

Hinds's study typifies this kind of exaggeration. It focuses on the gold that might be extracted from a series of mines along the "gold belt," a mineralized area stretching from west to east beginning in Guatemala, across El Salvador, through parts of Honduras, and ending in Nicaragua. Hinds's report compares the estimated gold *in the ground* to the gold held in reserve by the El Salvador central bank.

According to the report, the gold in the ground is equal to 60 times the reserves of the Central Reserve Bank of El Salvador and to 86 percent of the total gold reserves of the central banks of Latin America. This allegedly shows the measure of the benefits that would be discarded if the decision were made not to extract the gold of the sites in El Salvador.<sup>24</sup>

The value of gold bullion sitting in a bank vault is being compared to microscopic particles of gold that are spread over a large area deep underground at unknown locations. This would be an accurate comparison only if the gold in the ground could be found, extracted, processed, refined, and deposited in the central bank at zero cost.

In reality, the costs of finding gold in the ground and turning it into gold bullion may well exceed the value of the gold. For that gold, leaving it in the ground represents no economic loss at all. In fact, there could be a loss if it were to be extracted. The mineralization in this area has been known for decades, if not centuries, but only limited mining has taken place over that long period of time because the costs exceed the value of the gold. Higher contemporary gold prices and new technologies may now make more gold extraction commercially feasible. But the commercial benefit of that extraction is not measured by the market value of gold, but by the extent to which that market value exceeds the costs of discovery, extraction, and refining.



## Imagining mines

Another common source of exaggerated benefits involves imagining large numbers of new mines continuously opening for decades. In El Salvador, for instance, one gold mine—Pacific Rim’s El Dorado Mine—applied for an exploitation concession in 2005. Pacific Rim is also exploring other promising gold deposits in the area.

Based on this exploration, Hinds hypothesizes that not only will El Dorado open, but that each year another mine will open, leading to 10 mines the size of the proposed El Dorado. Not satisfied with 10 mines in 10 years, he also projects that new mines might continue to open annually indefinitely into the future.<sup>25</sup> Such *assumptions* can generate an estimated benefit of unlimited size, regardless of the costs or commercial feasibility of these imagined mines.

Hinds goes so far as to argue that this indefinite expansion of mining is the typical pattern around the world.<sup>26</sup> But this is not the case. As discussed above (see section 4), modern metal mines are designed to have a relatively short life span so that invested capital can be quickly recovered. That is one of the reasons that mining companies often seek to minimize the infrastructure that has to be built at the mine to support workers and mine operations, opting instead for commute-in, commute-out arrangements.

Mining proponents use gold mining in the US state of Nevada to illustrate how mining can grow steadily for a century or more as new, larger deposits are continuously discovered.<sup>27</sup> This example is faulty for several reasons. For starters, the recent expansion of gold-mining operations in Nevada only began in 1980 and peaked in 1998. Since then, Nevada gold production has declined by about

▲ Communities that must move to make way for mines face an uncertain future. Depending on the compensation and housing offered, villagers may get a decent house, some cash, and services like electricity and running water. On the other hand, farmers may lose their land and ability to support themselves, and with few available jobs at nearby mines, they may not be able to pay utility bills and cover other expenses. At this cramped relocated community near the San Andres Mine in Honduras, villagers complain that the compensation package they are due is inadequate, they have no land, their community is growing in population, and there is no long-term vision for development for the area after the mine is finished. In 2007, a group of 50 here blocked the main road to the mine for over 20 days to demonstrate their displeasure.

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## The commercially valuable deposits in Central America tend to be widely separated and rapidly developed and depleted using contemporary technology.

a quarter. Even at the peak in the 1990s, as gold production grew by 50 percent, Nevada's metal-mining jobs fell by 27 percent—a loss of 3,700 jobs—as technology displaced miners.<sup>28</sup>

Over a longer time frame, Nevada's mining history, like mining history everywhere, has been characterized by booms and busts, with mines opening, being exhausted, and closing. Nevada's gold mining boomed in the late 1870s, but then dropped to near-zero production from 1880 to 1905. Then it boomed briefly again, only to fall to near-zero production from 1920 to 1935. War-related demand brought production back up, but by the late 1940s, gold production was back to near zero and remained there until the late 1960s. Indeed, Nevada's experience with gold mining has *not* been one of smooth, uninterrupted expansion that brought long-term prosperity to communities.<sup>29</sup>

Furthermore, the mineral deposits in Central America are different from those in Nevada. The commercially valuable deposits in Central America tend to be widely separated and rapidly developed and depleted using contemporary technology. The potential for expanding development of an ore deposit over many decades is very low. Rather than a continuous series of contiguous developments as has taken place in Nevada, the seven-year economic life of Goldcorp's San Martin

▲  
"I am just a humble peasant who hasn't studied," said Antonio Membreno at a community meeting on mining near Ilobasco, El Salvador. "But they are not going to convince me that cyanide isn't poison. I know it is." Some mining company representatives claim that the cyanide used in gold extraction, which can contaminate local waterways, is harmless.

Jeff Deutsch / Oxfam America

Gold Mine in Honduras (see The role of metal mining in the Central American economies) is more representative of the mineral opportunities in Central America.

### **Multiplying multipliers**

Although the employment and payroll directly associated with operating a mine and processing the ore can usually be measured with reasonable accuracy when a mine first opens,<sup>30</sup> the mine's larger impact as those workers spend their pay and as the mine purchases other inputs is not as easily measured. Rather, it has to be crudely approximated. Typically, a "multiplier" is applied to the mine's direct impact to account for these "ripple" or "spillover" impacts. Since these are crude approximations, there is room for manipulation or exaggeration of the employment and payroll impacts.

For instance, the study by Hinds (see page 15) estimated that the El Dorado Mine would directly employ 450 people initially. Hinds then applied multipliers, estimating that when the mine purchased other goods and services to support its operation and the government spent the taxes and royalties paid by the mine, this direct impact would be multiplied by a factor of about six, creating more than 2,500 additional jobs. He then multiplied this number by three to account for "indirect jobs." As a result, Hinds projected that almost 6,000 additional jobs would be created. Finally, rather than focus on the mine that had actually been proposed, the El Dorado, he assumed that three other mines like it were also being proposed, effectively adding another multiplier of four. Through this multiplying of multipliers, Hinds turned the **450 jobs** that the mine would actually initially create into nearly **36,000 jobs**.

In this process, Hinds made two gross errors. First, the "indirect" job multiplier is partially tied to the mining company's purchases and payments; an additional multiplier is not needed. Second, a multiplier should not be applied to the "indirect" impacts.

In this case, nothing constrains Hinds's use of multipliers except his imagination. There is no way to verify these multipliers. The most accurate way to proceed is to focus on the actual direct jobs created and then qualitatively indicate that there will be ripple or spillover impacts that will increase the impact somewhat.

The reality is that in Guatemala, Honduras, and El Salvador, the multiplier impacts are likely to be small. The proposed metal mines are relatively small. There is little commercial infrastructure in the rural areas to support mining. And much of the supplies, equipment, and personnel will have to be imported. All of these factors will limit the spillover impacts of mining activities.

### **Paying attention to who gets the benefits**

Understanding the distribution of mining costs and benefits is central to understanding the opposition to mining and the real possibility that any given project may not contribute to sustained economic development. The World Bank's mining department has funded several studies to "answer the question as to who benefits—and who does not—from the effects of the opening and operation of a large mine, and why."<sup>31</sup>

While mining may create great net value, most of that value flows out of the country to the foreign owners of the mining company. The “exported” part of the economic value does not benefit the local community or nation. And to the extent that nonresidents are recruited to fill mining jobs, even labor benefits will not flow to communities.

For this reason, conventional macroeconomic measures, such as the impact on GDP or total exports, are not useful measures of the local or national benefits of mining. Rather, the key determinants of local benefits are the distribution of the net value being created between foreign owners and national citizens, between residents living near the mine and citizens who are not part of those communities, and between local communities and the national government.

Payroll costs at a modern metal mine represent a relatively small part of the total value from a mine. According to a World Bank study:

... [L]ocal communities have become more and more concerned that they shoulder all the negative impacts of mining, but receive few of the benefits. This is especially the case because capital-intensive large mining operations generate only a fraction of the jobs that they did a generation or two ago.<sup>32</sup>

In the past, communities were often satisfied with the large number of jobs that accompanied a large mine operation. However, technological progress has greatly reduced the number of jobs, and for compensation, communities want other benefits.<sup>33</sup>

In 2002, US metal mines’ production payroll represented the following percentages of total value added:

**Table 2. Production payroll as a percentage of value added**

Source: 2002 Census of Mining (US Census Bureau), available through <http://factfinder.census.gov>.

Metal mining	Production payroll (percent)
Gold	15.1
Copper & nickel	12.5
Lead & zinc	14.2
Silver	21.6
Iron	13.9

These numbers show that most of the value created at a metal mine is not assigned to the workers who extract and process the ores. The vast majority of the value goes to those who invest capital in discovering, developing, extracting, and processing the ores; those who own the mineral rights to the ores; and governments who tax the operations.

We can make a similar point about the impact on exports. When local businesses own land and equipment and hire labor to create a product, exports bring in foreign exchange that flows to local residents and boosts the standard of living. Conversely, when a foreign firm invests capital and employs relatively small amounts of local labor, most of the foreign exchange associated with the exports flows abroad. In addition, to the extent that mine workers’ incomes rise substantially,

they may boost imports of consumption goods rather than purchasing locally produced goods. For all of these reasons, looking at the gross level of mineral exports tells us very little about who actually benefits from mining.

Finally, local residents will not necessarily fill the jobs created by mines. Mines may draw on an experienced mining workforce that is not local. In addition, nonresidents seeking employment at the mine may commute or migrate to the mine to take the jobs.

Because Central American mining proponents use the gold-mining experience in Nevada as a model of the benefits gold mining can bring to local residents, statistics from Nevada may be informative.

## When a foreign firm invests capital and employs relatively small amounts of local labor, most of the foreign exchange associated with the exports flows abroad.

Between 1982 and 1994, gold mining in Eureka County, NV, expanded rapidly as Newmont Mining Corporation's Carlin Trend Mine and Barrick Gold Corporation's Betze-Post Mine were developed. Eureka County produced almost 40 percent of Nevada's gold. During this period of rapid growth, 4,500 additional jobs were created, but the population of Eureka County did not grow. Between 1985 and 2005, earnings in mining grew 7.3-fold and total workers' earnings increased 5.3-fold after inflation, but the earnings of the residents of Eureka County hardly increased in real terms (+1 percent).

The explanation for this startling result was that the mines were developed in isolated areas with few residents. The closest urban area was in an adjacent county, Elko, where the mines put their headquarters and located their workforce. Those workers commute to and from the mine. As a result, 80 to 85 percent of those who work in Eureka County do not live there. About 80 percent of the payroll earned in Eureka County flows out of that county to where the miners' residences are located.<sup>34</sup>

This arrangement has two important implications. First, even the small part of the mineral value that goes to pay workers may not flow to local residents. It may flow out to the principal residence of the miners. Second, this arrangement *does* reduce the disruption that opening and closing a mine can have on small rural communities. But it clearly warns us against assuming that mining benefits will automatically flow to communities adjacent to the mine.

This may be even more relevant to rural areas of Guatemala, Honduras, and El Salvador, where an industrial workforce that can readily take mining jobs does not exist. Typically, in that setting, in-migrating workers with mining experience fill the mining jobs. Such mobile industrial workers are likely to have quite different values than the indigenous peoples, setting the stage for cultural and economic conflict.

## Assuming environmental damage away

After a mining project is licensed and proceeds, the actual characteristics of the mine can change. Underground mining can be abandoned for cheaper open-pit mining. The mine may move into sulfide ores with acid mine drainage problems. The water regime discovered may be different from that originally projected. The decontamination of the waste material may be more difficult and less complete than claimed. The containment of toxic chemicals and pollutants may be incomplete.

The fact is that in order to get a permit, most mines must demonstrate on paper that they will avoid pollution problems. The actual performance of those mines, however, almost always involves substantial pollution and near-permanent surface disturbance. Despite this fact, each new mine asserts that *it* will do things differently this time and that this particular mine will have no significant environmental problems. Such projections of pollution-free mining are rarely realized.

A recent analysis of metal mine performance in the US has documented this. The study focused on the 183 large mines for which environmental impact statements were prepared since 1975. For a representative sample of these mines, the study compared the projections of water quality with actual water quality once the mine was operating.

For 84 percent of the mines, actual pollution violated the water quality standards the mines were required to meet. Of these failing mines, 44 percent had mischaracterized the geochemical characteristics of the ores (e.g., sulfide content), 24 percent had mischaracterized the hydrology of the mining area, and 64 percent had been overly optimistic about the adequacy of their mitigation strategies to control water pollution.<sup>35</sup>

In countries with well-developed environmental standards, the environmental damage associated with mining turns out to be much higher than was projected. Thus, it is highly likely that in Guatemala, Honduras, and El Salvador, one cannot assume the permitting process will reduce environmental damage to zero. Rather, there will be significant environmental damage. Strict enforcement of environmental standards and vigilant monitoring of mining projects can reduce that damage, but the risk of serious, even permanent, environmental damage will remain. That very real cost—which is centered geographically on the rural communities near the mine—cannot be ignored.

▼  
At the San Andres Gold Mine in Honduras, water is sprayed into a holding pond in order to dissipate any cyanide, which breaks down when exposed to sun and air. Modern gold mines mix cyanide with water to dissolve gold out of ore, and the resulting solution is then passed through an electrochemical process to separate the gold. The water is then stored in ponds and used again. Any water with cyanide in it must be managed carefully to avoid contaminating nearby rivers and streams.

*Edgar Orellana / Oxfam America*





# Mining and sustained local economic development<sup>36</sup>

## What economic studies reveal about mining and sustained development

In recent decades, the more a developing country has depended on mineral development, the slower its per capita income has grown. In general, relying on mineral development has not been consistent with sustained economic development. These findings are what led to the skeptical titles of mining reports mentioned previously.

Harvard economists Jeffrey D. Sachs and Andrew M. Warner were among the first to document the relatively poor performance of developing nations that have a high ratio of natural resource exports relative to total GDP. For the period of 1970 to 1990, they studied 95 countries and found that the higher the dependence on natural resource exports, the slower the growth rate in GDP per capita.<sup>37</sup>

In a 1999 study, Sachs and Warner also looked at Latin American countries to see whether natural resource booms provided a push toward sustained development. They found that in countries that had experienced a natural resource boom, none had a greater growth rate after the boom than before it. In fact, for some, the growth rate was negative after the boom.<sup>38</sup>

More recently, Sachs and Warner tested the possibility that this negative relationship between dependence on mining exports and national economic growth was due to some characteristic other than mining dependence. Yet even allowing for that possibility, they found evidence of the resource curse: the heavier the reliance on natural resources in exports, the slower the rate of growth in GDP per capita.<sup>39</sup>

Economic geographer Richard M. Auty of Britain's Lancaster University analyzed 85 countries for the period of 1960 to 1993 to see if natural resource abundance contributed to economic development. Auty separated the smaller nations that he assumed would be less economically diversified and, among those, the nations that relied on solid minerals as opposed to oil and gas. He found that the small solid mineral countries actually had negative growth between 1970 and 1993 (-0.2 percent per year). As a result, they went from having a per capita GDP that was well above those in small nonmineral countries to well below them. Overall, he found that the mineral-driven resource-rich countries were among the poorest economic performers.<sup>40</sup>

In recent decades, the more a developing country has depended on mineral development, the slower its per capita income has grown. In general, relying on mineral development has *not* been consistent with sustained economic development.

Alan Gelb, World Bank economist and director of development policy, also compared solid mineral exporters, oil exporters, and other middle income and poor countries for two periods, 1960 to 1971 and 1971 to 1983. He found that, in the first period, the solid mineral countries did not do better in terms of growth than the countries that had not specialized in natural resources. And after the terms of trade deteriorated in the second period, the solid mineral countries did the worst in terms of growth and return on investment.<sup>41</sup>

Economist Jean-Philippe Stijns at the University of California, Berkeley, confirmed the results of Sachs and Warner that nations that depended on natural resource exports performed worse than other nations over the last several decades. In addition, he showed that if the focus was on natural resource *production* or endowment within the nation instead of natural resource *exports*, the negative relationship disappeared. (He did not, however, find a positive relationship between dependence on natural resource production and economic growth.) He concluded that natural resources and their production do not have a significant relationship to national growth rates. But if nations primarily export their natural resources instead of using them internally to support their citizens and manufacturing, there is a significant negative impact on growth.<sup>42</sup>

In 2002, when the World Bank and International Finance Corporation analyzed the economic growth of 51 solid mineral-dependent countries in the 1990s, they revealed mixed results:

- Countries that depended on solid mineral exports experienced a negative impact on the growth in real GDP per person. In fact, the solid mineral countries had negative growth rates.
- Countries that depended on solid mineral production fared somewhat better. When India and China—which do not engage in significant international trade in solid minerals but produce high levels of solid minerals for internal use—were included, this study found that countries relying on solid mineral production performed better than other countries in their region. However, when compared with all other developing countries rather than just those in their region, the solid mineral countries had slower growth. And when India and China were not included in the sample, mineral activity was not linked to superior economic performance—even within their own regions.

Ultimately, the report concluded that mineral activity was neither necessary nor sufficient for sustained economic growth.<sup>43</sup>

Others have tried to explain the poor performance of resource-rich nations in recent decades. Auty focused on the poor investments in human capital and the poor development of appropriate and stable institutions in resource-rich countries. He also pointed to the environmental damage caused by mining.<sup>44</sup> Nancy Birdsall, Thomas Pinckney, and Richard Sabot have shown that resource-abundant nations tend to invest less in education.<sup>45</sup> Thorvaldur Gylfason and Gylfi Zoega found that a strong focus on developing a nation's natural resources tended to “crowd out” investments in physical and human capital.<sup>46</sup> The World Bank also found that the worst performing solid mineral countries were plagued by poorly developed political and social institutions, poor economic management, and underinvestment in human capital and public infrastructure.<sup>47</sup>



Some have criticized these empirical studies for focusing on the last several decades rather than looking at the entire 20th century. However, the world economy and the economic context in which developing countries' mining ventures have to operate have changed dramatically in the second half of the 20th century. It is not at all clear that going back 50 or 100 years in order to find success stories would provide reliable information for developing countries in the early 21st century.

▲  
Sofia de los Reyes Sandoval and her husband worked as farm laborers in El Salvador for many years, and they saved their money to buy land near Texistepeque. The mining company Pacific Rim wants to explore on their land, but the Sandovals are refusing the company permission, saying they will never allow their land to be used for gold mining, as it will pollute the water, which is very scarce in the area.

*Edgar Orellana | Oxfam America*

## A closer look at developing country “success” stories

It is certainly true that there have been a few developing countries that emphasized mineral development and managed to enjoy extended periods of economic growth. Both Chile and South Africa have relied on mineral development for over a century and have had significant periods of economic growth.

Chile began its economic development by focusing on nitrate production between 1880 and 1919. It enjoyed a near monopoly in nitrate production and was able to use the revenues from that sector to finance both infrastructure and manufacturing. Chile's copper industry also boomed in the late 19th century, but then lagged as ore quality deteriorated. After 1920, the transfer of American technology, expertise, and corporate organization through investments by Guggenheim and Anaconda revitalized Chile's copper industry and set it on the road to becoming a world leader.<sup>48</sup> Chile's economic development slowed and then stalled in the middle of the 20th century. More recently, especially in the 1990s, it has rebounded, continuing to emphasize mineral development.

During the 1990s, Chile led all other Latin American economies in growth. The explanation for this growth, however, is not its mining sector. According to one World Bank publication, “While over the past decade revenues generated from mining have helped strengthen economic growth, the overall economic performance cannot be understood other than in the light of the overall quality of institutions and economic management.”<sup>49</sup> Whether this growth will be sustained is certainly open

For Central American communities and nations, the warning is clear: Mining usually does not bring substantial net benefits—and it may well undermine local economic well-being.

to some doubt, given the fits and starts in Chile's past economic performance and its long periods of very slow growth.

South Africa began producing gold in 1867 and diamonds in 1886. These mineral developments drew massive flows of capital and labor from abroad and rapidly expanded production and exports. South Africa constructed a "European" economy primarily around those resource flows. It also confiscated the lands and resources of the indigenous population and sought to exclude the indigenous population from the benefits of economic development. For instance, wages for blacks in gold mining were no higher in 1971 than they were in 1911.<sup>50</sup>

South Africa's experience is relatively unique, given that a minority of European immigrants has dominated the majority of the population for most of the 20th century. However, in the late 20th century, two neighboring countries, Botswana and Namibia, managed significant economic growth despite heavy reliance on mining. This contrasts with the dismal performance of most African mineral economies. A World Bank review commented that "depending on the quality of a country's economic management and the competence of its institutions, mineral-rich countries can either fare spectacularly well or fail in similarly spectacular ways."<sup>51</sup> For most mining-dependent developing countries, it has been primarily a spectacular failure. Clearly, mining by itself cannot trigger and sustain economic development.

Even in prosperous countries such as the US, dependence on mining has not reliably brought local prosperity. Despite the wealth generated by mining and the relatively high wages paid to miners, many American mining communities are anything but prosperous. In fact, in the US, the historic mining regions have become synonymous with persistent poverty. Of these, Appalachia (coal), the Ozarks (lead), and the Four Corners (coal) are the most prominent.<sup>52</sup> The federal government has devoted considerable resources to overcoming poverty and unemployment in these districts.

In addition, the Iron Range in Minnesota; the copper towns of Michigan, Montana, and Arizona; the Silver Valley in Idaho; and the gold-mining towns of Lead and Deadwood, SD, have also struggled. Over the last several decades, some of these areas have begun to recover as a result of the in-migration of new, relatively mobile citizens and economic activities. But that recovery is entirely nonmining based.

In a few mining areas, the revival of metal mining from its 25-year slump as a result of the high metal prices of the early 2000s has boosted mining employment and income. But from 1980 to 2000, American mining-dependent communities saw payroll, per capita income, and population grow more slowly than in nonmining communities. In addition, unemployment was substantially higher in American mining-dependent counties than in nonmining counties within the same state.<sup>53</sup>

We can conclude that mining does not *always* retard economic growth, but that mineral development does not assure sustained economic development. For Central American communities and nations, the warning is clear: Mining usually does not bring substantial net benefits—and it may well undermine local economic well-being. Each proposed mining project must be critically analyzed in terms of its mix of local costs and benefits.

# Lessons learned: What to focus on when evaluating a mining proposal

Mining advocates usually make the case for mining by focusing on quantitative economic indicators measured at the national level, such as the following:

- Total value of the mineral produced;
- Number of jobs created;
- Payroll associated with the jobs;
- Contribution to GDP;
- Increase in exports; and
- Taxes and royalties that flow to the government.

These are among the most readily available indicators included in a nation's economic accounts. So it is not surprising that a nation will commonly focus on such indicators to evaluate the economic impact of a mining project.

The problem is that these indicators do not tell us ahead of time whether a particular mining project will improve the local economic well-being of affected communities or contribute to the sustainable development of those communities or the nation.

To evaluate more effectively the potential economic and developmental value of a mining project, we should consider two factors. First, is the community involved in evaluating and approving/disapproving the proposed project? And second, if the community were to approve a mine, how might it redesign the project to increase the likelihood that the mine would contribute to sustainable local economic development?

## Community approval of mining projects

The international standard that indigenous peoples must give their free, prior, and informed consent to development projects has important economic logic. If local communities are not consulted about and given the legal right to reject a mining project, the likelihood that the project will contribute positively to local well-being or to sustainable economic development is quite low.

If mining companies and the national government do not seriously consult with local communities, they will not understand what contributes to local well-being. They will not recognize what are local benefits and what are local costs. As a result, they will not have the factual basis to design a project for which the local benefits exceed the costs.

If local communities are not consulted about and given the legal right to reject a mining project, the likelihood that the project will contribute to local well-being or to sustainable economic development is quite low.



▲  
Part of the processing facility at the San Andres Mine in Honduras, where crushed ore is sprayed with a cyanide and water solution. Conflicts between the local community displaced by the mine and the mine company over compensation led to road blockages that closed the mine for over 20 days in 2007.

*Edgar Orellana / Oxfam America*

Instead, the mining project may impose serious costs on communities while meeting almost none of their needs. This should not be surprising. A mining company pays attention to the benefits and costs that commercial markets recognize. Meanwhile, it is likely to ignore the nonmarket environmental, social, and cultural costs, as well as the distribution of payroll and tax benefits to various national groups.

Likewise, the national government may also have limited information on the potential local impacts of a mining project and the needs of a local population. Rather, the government may make decisions from a narrow fiscal perspective or on the basis of culturally and politically biased theories of national economic development. As with mining companies, the government is unlikely to have the information necessary to know whether the benefits of a particular project will exceed the costs.

Only the local communities, including indigenous peoples, have details about local conditions, local needs, and local values—the type of information needed to evaluate accurately the potential benefits, costs, and risks of a proposed project. Mining companies and national governments will only seriously seek out and act on that local information if communities have the power to reject a proposal for which they judge the costs to exceed benefits. A community's right to reject a mining project creates the context for real fact-finding and negotiation.

Having community approval ahead of time can be valuable for other reasons as well. Proceeding without local approval can lead to ongoing conflict. Even if a company obtains the requisite permits from the government, it will not effectively have a green light if communities oppose the project. Rather, as protests delay construction, interrupt production, raise costs, or reduce productivity, the project's

success will be uncertain. If a company formally negotiates or learns that a community has rejected the proposal, there will be no uncertainty. This community approval is the “social license” that the World Bank has begun to emphasize as necessary for a successful mining project.<sup>54</sup>

## Community redesign of projects to contribute to sustainable local development

Local communities may reject some mining proposals outright because of their location, the technology to be used, their displacement of existing economic activities, or their conflict with local cultural and ethical values. Other proposals may be objectionable as proposed, but have the potential to offer important local benefits at relative low cost *if* they are redesigned. With these proposals, communities may negotiate with mining companies for changes in design and operation so the proposals can win community approval.

Often foreign-financed mining ventures have had few linkages with the rest of the local or national economy. As a result, mining has been a relatively isolated activity. As such, mining can create temporary growth and boost the economic well-being of the small number of people directly employed in the venture, but when the mine is exhausted or shut down, that stimulus ends, the growth ends, and the well-being of mine workers tumbles downward. The local and national economies slide back to where they were before the mining started.

For mining to contribute to economic *development* as opposed to temporary economic growth, it has to trigger economic changes that endure by doing the following:

- Developing new and transferable skills;
- Transforming part of the population into entrepreneurs;
- Creating public infrastructure that boosts productivity in sectors other than mining; and
- Improving community infrastructure, including education and public health.

In addition, as mining proceeds, new types of economic activity that are not solely related to mining have to develop so that when mining slows or ends, much of that new economic activity can continue. That is, the mining must stimulate *development*, not just growth. According to one analyst:

Without good planning and constructive intervention on the part of the government and the cooperation of the private sector, the wealth and economic activity generated by mining is short lived and the unmanaged aftermath of mining can be as destructive as the proceeds of mining are beneficial.<sup>55</sup>

When local communities are willing to negotiate over a mining proposal they find somewhat attractive, they are seeking ways to complement or supplement their livelihoods. That is, they are interested in some forms of economic development.<sup>56</sup>

Mining can create temporary growth and boost the economic well-being of the small number of people directly employed in the venture, but when the mine is exhausted or shut down, that stimulus ends, the growth ends, and the well-being of mine workers tumbles downward.

## Maximizing economic linkages with the local community

For a mining project to contribute to the sustainable development of the local region and communities, it has to develop significant economic linkages to those communities. When money from mining reaches a community, this encourages the creation of diverse economic activities that may continue when the mining operation shuts down.<sup>57</sup>

The most obvious link is hiring residents to work at the mine. Such local hires are not assured. Depending on the experience of the local residents, the mining company may prefer to hire more experienced workers who come from the outside. Such in-migration of outsiders, who are likely to have different cultural values than the local population, can be very disruptive, bringing conflict and objectionable social behavior such as prostitution and drug-related activities.

If the local population has little industrial work experience, the mining company is likely to hire residents only if it has made a point of starting a workforce development and training program before opening the mine. In any case, the community may need to insist on a locals-first hiring commitment to ensure payroll benefits flow to the local community and to avoid the social disruption of significant in-migration.

A mine can potentially create a demand for local inputs that stretches far beyond the demand for workers. A mine needs a broad variety of goods and services to operate. If local residents and their businesses can provide those goods and services, the local economy can diversify in a variety of ways, growing more sophisticated as local residents develop new knowledge, skills, and experience.

A mining company may prefer to purchase such inputs from familiar suppliers outside the community. But that tends to make the mining operation the type of “export enclave” that does little to transform the local economy in sustainable ways. A community or government may need to push the mining company to develop procurement policies that support and favor local producers. This may require a proactive program of investigating local supply potential and running workshops to both inform potential local suppliers and train them in the necessary skills and quality control.

The mine could provide the impetus for entrepreneurial development as well as skill and technology transfer—productive human capital development that could serve the local community regardless of how long the mine operates. The mine’s supply needs are not all high-tech and beyond the reach of a rural workforce. In addition, because mining pays higher wages, some local residents are likely to change their consumption patterns. That could lead simply to more imports from outside or, if there is an entrepreneurial base, to the development of new businesses in the local area to serve new consumer demands.

If the mining company is seeking the fastest way to get the mine into production and does not plan to integrate the mine into the local community, it may not develop these important links with the community. This dramatically reduces the likelihood that the mine will support sustained local development and increases the likelihood that local costs will exceed local benefits. When low commodity prices, mineral exhaustion, or both lead the mine to close, the community will suffer an economic decline and will be left with only the environmental and social costs of the mine.



## Infrastructure improvements of value to the larger economy and community

In the past, some mining companies have provided schools and medical clinics to their workers. Such services clearly benefit workers and their families as long as the mine operates. But modern mines require relatively few workers—which means any special services for workers will have a limited impact on the community as a whole.

The increased tax base associated with building and operating a mine can provide the basis for significant improvements in local public infrastructure that permanently boosts the productivity of the local economy. Such improvements might include the following:

- The building or upgrade of highways that link a rural area to national markets;
- Upgraded local roads and streets;
- Upgraded energy supplies, electricity, and/or natural gas; and
- Upgraded schools and expanded health care facilities.



The prospect of a mine operating in this area currently inhabited by indigenous Q'eq'chi people in Guatemala brings a dilemma: Will any benefits to the community, such as paved roads, electricity, schools, and health clinics, boost the local economy and make up for any costs to the environment and loss of Q'eq'chi culture?

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Freddie Mo Qub (left), a leader of the indigenous Q'eq'chi community of La Paz, Guatemala, poses with his family in front of the small building where he runs a corn mill. Mo Qub is participating in training sessions led by the Association of Friends of Lake Izabal (known by its Spanish acronym, ASALI) to learn about the rights of indigenous people and the likely effects of industrial mining in the area. Oxfam America funds part of ASALI's program to raise awareness about the effects of mining on indigenous people.

*Edgar Orellana / Oxfam America*

All of these would boost local productivity and human capital, laying the basis for continuing development. Such infrastructure upgrades, however, do not come cheaply. While mining companies are unlikely to make such investments solely for their development value, they do expect to pay significant taxes and royalties to the government—money that, in theory, could pay for community enhancements. However, in practice, these revenues often go directly to national or provincial governments that are distant from the mine. As a result, few of those “public” benefits flow back to local communities.

The local communities that will bear the environmental and social costs must also significantly share in the financial benefits of mining. They must have a say in how the government spends their share of tax and royalty revenues on local infrastructure needs. This does not necessarily burden the mining company any more; it simply amounts to a more equitable distribution of the mineral wealth. It is in the mining company's best interest that some of its payments to the government reach the communities near the mine. That allows the mining company to demonstrate clearly the way the mine will benefit all residents, reducing conflict and enhancing trust.<sup>58</sup>

# Summary and conclusions

Mining is unlikely to contribute significantly to the economies or export revenues of Guatemala, Honduras, and El Salvador. Costs, such as exposure to volatile commodities markets, limited demand for local labor, and relatively short mine lives, are likely to diminish significantly any benefits that may come from this sector. These conclusions are supported by the history of mining, both in countries where it is believed to have contributed to development, such as the US and in the developing world, including the countries of Central America. Expected benefits from aggressive development must be evaluated in light of long-term costs. These costs include environmental, social, and cultural factors, as well as consistent opposition to large-scale open-pit mining in Guatemala, Honduras, and El Salvador.

In addition, nations and communities must analyze benefits on both the national and local levels. Many national-level arguments for mining, such as the opportunity to monetize natural resources, ignore costs that are borne almost exclusively on the local level, such as environmental degradation and the physical and economic displacement of neighboring communities.

Natural resource development has a relatively poor track record for initiating sustainable development. Renowned economists Sachs and Warner, as well as the World Bank's International Finance Corporation, have shown that natural resource development has, at best, as much chance to deliver measurable economic development as it has to fail. In the context of the likely costs of large-scale mining, it is easy to understand why local communities in Guatemala, Honduras, and El Salvador are concerned.

Given the high stakes involved, local communities must play a pivotal role in project and policy decision-making. This should start with universal support for communities' right to free, prior, and informed consent. To support that consent process, host governments and mining companies should create a space in the public discourse where stakeholders' interests can be respected and reconciled. This is especially true in Guatemala, Honduras, and El Salvador, where political and social factors may limit the role of certain groups, such as indigenous peoples, in the policy-making process.

Natural resource development has a relatively poor track record for initiating sustainable development.

# Notes

1. CEPALSTAT: Latin America and the Caribbean Statistics (UN Economic Commission for Latin America and the Caribbean), <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.
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28. Gold mining represents about 97 percent of the value of Nevada metal mining. Production data are from the US Geological Survey's annual "Minerals yearbook"; metal-mining employment data are from the Regional Economic Information System (Bureau of Economic Analysis, US Department of Commerce), [www.ciesin.org/datasets/reis/reis-home.html](http://www.ciesin.org/datasets/reis/reis-home.html).
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56. Some indigenous communities may be primarily focused on protecting their traditional ways of earning a living and may not support the systematic changes associated with economic development.

For Central American communities and nations, the warning is clear: Mining usually does not bring substantial net benefits—and it may well undermine local economic well-being.

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Main pit of the San Andres Mine in Honduras. Mines like this one that expose rocks to the elements usually produce acid, which pollutes local waters. This acid mine drainage can effect the environment for centuries. Local laws vary on how much companies must do to reclaim mining sites. Although the company that owns this mine will probably not fill this pit back in when finished mining, company officials say they are replanting 80,000 trees in the area to help restore the environment.

*Edgar Orellana / Oxfam America*



**Cover:** Main pit at the San Andres Gold Mine in Honduras. This mine produces about 70,000 ounces of gold a year at a cost of roughly \$380 per ounce. The mine relocated three farming communities from the 980-acre concession and employs about 60 people from the local area, leaving the rest with few opportunities for employment. Officials from the company that runs San Andres, Yamana Gold Inc., say it has contributed about \$18.8 million in taxes and social programs since the mine was established 10 years ago, but local people say that there have been cyanide spills into nearby rivers and that after the mine has finished its work, they will be left with pollution and no means of making a living.

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