

## Mineral Wealth, Conflict, and Equitable Development

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In theory, new mineral wealth should offer governments a chance to boost economic growth and reduce inequality.<sup>1</sup> In practice, it often leads to a type of inequality trap: mineral production produces heightened inequalities, which lead to violent conflict; violent conflict tends to scare off investment outside the minerals sector, which might have otherwise reduced inequalities. As a result, countries become lodged in an inequality trap, unable to diversify the economy in ways that could reduce inequalities and lower the risk of violent conflict. Countries such as Algeria, Angola, Colombia, the Democratic Republic of Congo, the Republic of Congo, and Nigeria have all suffered from mineral-based inequality traps.

There is nothing inevitable about these traps: mineral-rich countries such as Botswana, Chile, and Malaysia have all avoided them and used their resource wealth to reduce inequality. However, avoiding an inequality trap is not easy and can only be done when the government can navigate a complex series of economic, social, and political challenges.

One of the most difficult challenges is deciding how to deal equitably with the regional or local communities where the extraction occurs.<sup>2</sup> Both the central government and the local communities typically claim ownership of the resources, dispute the other side's claims, and have some ability to slow or block projects they dislike. Mineral firms are often caught between the two sides. When these disputes can be resolved, mineral development can proceed without triggering conflict; but if mineral development proceeds without the resolution of these issues—as in Bolivia, Indonesia,

Papua New Guinea, and Sudan—the result may be political unrest and long-term inequality traps.

This chapter explores the problems and opportunities that governments, firms, and local communities face when they must divide the costs and benefits of a mineral development project. It makes four central arguments:

- Mineral-dependent countries have the highest risk of violent conflict when they have low income levels; when they produce oil or other deep-shaft minerals; and when the mineral-rich region is mountainous, lies on the country's periphery, and harbors people who are ethnically or linguistically distinct from the rest of the country's population.
- Stable democratic institutions can help prevent central-local disputes from becoming violent, but new democracies are often unstable and face high risks of conflict.
- Granting additional rents to the extractive region is often insufficient to avoid conflict.
- To avoid violent conflict in the extractive region, governments, firms, and local communities should promote transparency, establish multi-stakeholder dialogues before projects begin, and take special care to protect human rights and security.

In this discussion, a country's mineral dependence is measured as the value of its oil, gas, and hard-rock mineral exports as a percentage of gross domestic product (GDP). In 2000, 53 countries had mineral exports worth more than 5 percent of GDP; they are the *mineral-dependent countries*.<sup>3</sup> About half these states—27 of the 53—had mineral exports worth more than 20 percent of GDP; these *high mineral-dependence countries* are listed in table 7.1.

As table 7.2 shows, most of the mineral-dependent states are found (in descending order) in Sub-Saharan Africa, the Middle East and North Africa, the former Soviet Union, and Latin America. Among the high mineral-dependence states, about 40 percent are in the Middle East and North Africa.

The chapter proceeds as follows. The first section explains why mineral-producing states tend to have atypically high rates of violent conflict. The second section describes six structural factors that can raise or lower the conflict risk in mineral-exporting states. The next section argues that, even in high-risk regions, governments and firms can reduce the conflict risk by promoting transparency, using multistakeholder dialogues, and paying

**Table 7.1. High Mineral–Dependence Countries, 2000**

Rank	Country	Mineral dependence <sup>a</sup>	Conflict years, 1990–2000 <sup>b</sup>
1	Bahrain	63.44	0
2	Qatar	53.37	0
3	Iraq	50	7
4	Turkmenistan	49.91	0
5	Gabon	48.83	0
6	Nigeria	48.75	0
7	Saudi Arabia	44.74	0
8	Papua New Guinea	41.52	6
9	Trinidad and Tobago	41.16	1
10	Congo, Rep. of	41.07	5
11	Brunei Darussalam	37.65	0
12	Kazakhstan	36.11	0
13	Libya	35.91	0
14	Algeria	35.75	10
15	Botswana	35.10	0
16	Kuwait	32.41	0
17	Azerbaijan	28.83	4
18	Angola	27.88	11
19	Zambia	27.12	0
20	Liberia	26.76	7
21	Norway	25.97	0
22	Oman	25.65	0
23	Iran, Islamic Rep. of	25.55	8
24	Mongolia	25.45	0
25	Russian Federation	25.38	8
26	Venezuela, R. B. de	23.54	1
27	Yemen, Rep. of	22.32	1

Source: Author's construction. Data on violent conflict come from the Armed Conflict Dataset 2007 maintained by the Uppsala Conflict Data Program at the Department of Peace and Conflict Research, Uppsala University, Sweden, and the Centre for the Study of Civil War at the International Peace Research Institute in Oslo, Norway.

a. A country's mineral dependence is calculated as its mineral exports divided by its gross domestic product, multiplied by 100.

b. This column indicates how many years from 1990 to 2000 were marked by violent conflict.

**Table 7.2. States by Region and Mineral Dependence, 2000**

Region	Not mineral dependent (< 5)	Mineral dependent (> 5)	Highly mineral dependent (> 20)
OECD	19	4	1
Latin America	18	8	2
Sub-Saharan Africa	30	14	7
Middle East and North Africa	8	11	10
Asia	10	4	2
Former Soviet Union	2	9	4
Other	20	3	1
Total	107	53	27

Source: Author's construction.

special attention to human rights and security issues. A brief conclusion summarizes these arguments.

### Minerals and Geographic Conflict

Since the seminal work of Collier and Hoeffler (1998), many scholars have found evidence that certain measures of mineral production or exports are linked to civil war. Econometric studies by Collier and Hoeffler (2004), de Soysa (2002), Fearon (2004), Fearon and Laitin (2003), Humphreys (2003), and Ross (2006) all find that oil-exporting states face a higher risk of civil war than states that do not export oil.<sup>4</sup>

Why should mineral exports be correlated with civil war? Many scholars have sketched out theories that link oil and other minerals to conflict. For this study, two are germane.<sup>5</sup>

First, sometimes the minerals-conflict link is spurious. Unlike other types of industries, mining is location specific: firms must go where the minerals are, even if the area is remote or unstable. Manufacturing and service firms tend to stick to countries—and regions of countries—where the infrastructure is good and law and order have been well established; mineral firms do not have this luxury. Hence, we will sometimes find mineral firms working in war-torn regions, even though mineral extraction did not cause the conflict. For example, some countries with long-running civil wars, such as Algeria, Angola, and Liberia, have grown heavily dependent on mineral exports, simply because other types of businesses have been forced to close or relocate to safer countries while mineral firms have stayed behind.

Sometimes, however, mineral extraction is causally linked to violent conflict—partly because mineral wealth seems to heighten the perception of

territorial inequalities, which, in turn, can cause secessionist movements.<sup>6</sup> Table 7.3 lists 10 cases of violent separatist movements in regions with significant mineral wealth.<sup>7</sup> In each case, leaders of these movements appeared to believe that mineral rents would raise the benefits—or lower the costs—of attaining independence. As Collier and Hoeffler (2005) suggest, the allure of claiming ownership to valuable natural resources can encourage populations in peripheral regions to establish sovereign states.

One example of a mineral-related secessionist conflict is the rebellion in Indonesia's northwestern province of Aceh. The rebel group—widely known as GAM (Gerakan Aceh Merdeka, or Aceh Freedom Movement)—began in 1976, shortly after the construction of Aceh's enormous natural gas facility. GAM's 1976 "Declaration of Independence" denounced the Indonesian government for stealing Aceh's resource revenues, but it did not criticize the natural gas facility itself, or Mobil (now ExxonMobil), which operates the facility.<sup>8</sup> One of GAM's first acts was to attack the plant. During the subsequent conflict, GAM propaganda often claimed that if Aceh were independent and its citizens could appropriate all of Aceh's gas revenues—instead of sharing them with the rest of the country—the Acehnese would become rich (Ross 2005). After waxing and waning between 1976 and 1998, the Aceh rebellion broke out into a full-scale civil war from 1998 to 2004. Following the tragic tsunami in December 2004, GAM reached a settlement with the Indonesian government in 2005.

A second example is the war in Sudan, which began in 1983, when Sudanese President Gaafar Mohamad Numeiry took a series of measures that upset the delicate balance between the predominantly Muslim north and the heavily Christian and animist south. Among these measures was his decision to place newly discovered oil in the country's south under the

**Table 7.3. Mineral Resources and Secessionist Movements**

Country	Region	Duration	Mineral resources
Angola	Cabinda	1975–2004	Oil
Congo, Dem. Rep. of	Katanga/Shaba	1960–65	Copper
Indonesia	West Papua	1969–present	Copper and gold
Indonesia	Aceh	1975–2005	Natural gas
Morocco	West Sahara	1975–88	Phosphates and oil
Myanmar	Hill tribes	1983–95	Tin and gems
Nigeria	Biafra	1967–70	Oil
Papua New Guinea	Bougainville	1988–97	Copper and gold
Sudan	South	1983–2004	Oil
Yemen, Rep. of	East and South	1994	Oil

Source: Author's construction

jurisdiction of the north and to build an oil refinery in the north instead of the south. The Sudan People's Liberation Army subsequently complained that the north was stealing the south's resources, including oil; demanded that work cease on a pipeline to take oil from the south to the refinery in the north; and, in February 1984, attacked an oil exploration base, killing three foreign workers and bringing the project to a halt (see Anderson 1999; O'Ballance 2000). After two decades of combat, the two sides signed a peace accord in May 2004.

### **Structural Risk Factors**

Even when mineral wealth makes secessionist conflict more likely, most of the time mineral extraction does not result in civil violence. Hence, there must be additional factors that help explain why mineral wealth sometimes triggers civil wars. Some of these factors are structural—that is, they are major historical, economic, and geographic features of the region that cannot easily be changed by state policies. Other factors are more tractable and can be readily influenced by the actions of governments, mineral firms, and nongovernmental organizations (NGOs). This section discusses six structural factors that—according to recent studies—are associated with a high civil war risk in mineral-dependent states; these factors help identify the countries and regions that face the highest civil war risk. The next section discusses some of the tractable factors that can alleviate—or exacerbate—the danger of conflict in these high-risk regions.

#### *Poverty*

Perhaps the most important structural factor is income per capita in the affected country. Several major studies have shown that civil wars are more likely to occur in poor countries than in rich ones (Collier and Hoeffler 2004; Fearon and Laitin 2003). The mineral-dependent countries in table 7.1 are coded by the number of years (from 1990 to 2000) that they suffered from violent domestic conflict. While wealthy mineral-dependent countries such as Kuwait, Norway, and Qatar have avoided civil war, poor mineral-dependent countries such as Papua New Guinea, Angola, and Algeria have been plagued by it. Indeed, no violent conflict occurred at all in mineral-dependent countries with incomes above the level of Trinidad and Tobago—about US\$11,175.

Steady economic growth can also reduce the conflict risk. In Indonesia, for example, the Aceh region—which around 1975 became a major source of liquefied natural gas exports—enjoyed high growth rates throughout the 1970s, 1980s, and early 1990s. Even though the rebel movement periodically attacked government facilities, it was more of a nuisance than a threat to the central government’s authority. This situation changed dramatically with the onset of the Asian economic crisis in 1997 and 1998. Aceh’s non-petroleum GDP declined by 5.9 percent in 1998 and 2.9 percent in 1999. The crisis also produced a jump in unemployment and underemployment: in 1998 alone, the number of people in Aceh’s official labor force dropped 37.3 percent. The economic shock was followed by a dramatic rise in GAM’s popular support and military activities (Ross 2005).

### *Terrain*

The second factor is terrain. Several studies have found a strong correlation between the likelihood of rebellion and the presence of mountainous terrain. This correlation can be interpreted in several ways. Perhaps governments find it harder to control mountainous terrain, enabling rebel movements—which are, at least initially, greatly outnumbered by government troops—to hide and persevere (Collier and Hoeffler 2004; Fearon and Laitin 2003). Alternatively, mountainous areas might serve as refuges for minority or dissenting groups. The greater risk of conflict in these regions could reflect historical antagonisms between peoples who live in plains and valleys and minorities groups that have found protection in the adjacent highlands.

### *Peripheries*

The third factor is the location of the extractive region. Separatist movements are more common in regions that lie along a country’s borders or are not contiguous with the rest of the country (Fearon and Laitin 2003; Le Billon 2001). All 10 mineral-related conflicts listed in table 7.3 occurred in peripheral regions; 3 of them—in Angola, Indonesia (West Papua), and Papua New Guinea—happened in areas that were not contiguous with the rest of the country. Peripheral regions are more likely to harbor people who identify themselves as ethnically or linguistically distinct from the rest of the population. It is also easier for rebel movements in peripheral regions to get funds and weapons—and to protect themselves from government troops—by crossing the border into neighboring states.

### *Prior Regional Identity*

The fourth factor is prior identity. Separatist movements may be encouraged by mineral wealth, but they do not seem to be created by mineral wealth. In each of the 10 cases in table 7.3, there was a strong sense of regional identity and at least some interest in independence before the mineral wealth was discovered or exploited.

In most cases, this regional identity was rooted in historical or geographic differences from the rest of the country. Cabinda, for example, was governed separately by the Portuguese until 1956; it is also not contiguous with the rest of Angola. Bougainville is geographically closer to the Solomon Islands than the island of New Guinea and was not governed as part of colonial New Guinea until 1886. Aceh was an independent sultanate until the end of the 19th century; the rest of Indonesia (then called the Dutch East Indies) had been subdued by the Dutch many decades—even centuries—earlier. The hill tribes of Myanmar had considerable autonomy under British colonial rule and are ethnically and linguistically distinct from the Burman and Karen peoples of the country's lowlands.

In some cases, the rebellious regions were not originally part of the country whose sovereignty they later rejected: West Papua was under Dutch rule until it was invaded by Indonesia in 1961; Western Sahara was under Spanish rule until 1975, when it was taken over by Morocco (and, for a time, Mauritania); and the People's Democratic Republic of Yemen was a separate country until 1990, when it peacefully united with the Arab Republic of Yemen.

These historical, geographic, and ethnic factors gave people in each of these regions a prior sense of identity that was distinct from—and sometimes opposed to—the national identity of the country to which they were annexed. The presence of mineral wealth added the prospect of great wealth—or perhaps, removed the prospect of great poverty—to the attractions of sovereignty.

### *Political Institutions*

Evidence indicates that stable democratic institutions help countries avoid violent conflicts (Hegre and others 2001; Muller and Weede 1990).<sup>9</sup> When discontented groups can bring about change through peaceful means, such as elections, they may be less likely to resort to violence.

Scotland's movement for political autonomy, which was partly motivated by the value of North Sea oil, provides a good example. Until 1974,



[[AQ: Correct year? Or 2005?]]

there was little support in Scotland for independence or autonomy: in the 1970 general election, the pro-autonomy Scottish National Party received just 11 percent of the Scottish vote and won a single seat in the U.K. Parliament. Yet the sharp rise in oil prices in 1973 and 1974 multiplied the value of North Sea oil and suddenly made Scottish autonomy economically attractive. In the 1974 election, the Scottish National Party adopted the slogan “It’s Scotland’s Oil”; the party won 30 percent of the Scottish vote and captured 11 seats (Collier and Hoeffler 2004).

Between 1974 and 1998, there was a steady rise in Scottish nationalist activity. Advocates had both violent and nonviolent options. The militant Scottish National Liberation Army was formed in the early 1980s to advance the cause through violence, while others worked through electoral and legislative channels, aligning themselves with the Labour Party. Twenty-four years after the 1974 vote, the peaceful campaign triumphed in 1998 when the U.K. Parliament adopted the Scotland Act, which led to the devolution of considerable powers from London and the opening of Scotland’s first parliament since 1707. The availability of peaceful channels for political change made violent options, like those offered by the Scottish National Liberation Army, less attractive.

The East Malaysian states of Sabah and Sarawak also illustrate the merits of democratic governance. In the 1960s and 1970s, Sabah and Sarawak were high-risk areas for a separatist rebellion: they were part of a country that, at the time, was relatively poor; their terrain is mountainous; they are separated from West Malaysia by water; most of their populations are ethnically and linguistically distinct from the peoples of West Malaysia; they had markedly different colonial histories from West Malaysia; and they only joined the Malaysian Federation in 1963, six years after the rest of the country had gained independence. Moreover, Sabah’s and Sarawak’s natural resource wealth gave both of them an economic incentive to secede: they have both been major timber exporters, and about half of Malaysia’s petroleum exports come from off the shores of the two states, even though the state governments get only a 5 percent petroleum royalty. If they were independent, they would—like neighboring Brunei Darussalam—reap a large windfall from oil and natural gas revenues.

Yet there has never been a serious independence movement—violent or nonviolent—in either state since it joined the Malaysian Federation. One reason is that Malaysia is both a stable democracy and a federal state. Both Sabah and Sarawak have local governments with substantial authority: citizens can express any grievances they have—at both the state and federal

levels—through the electoral process, and officeholders have incentives to mitigate these grievances, lest they lose their elected positions.

There are important differences, however, between stable democracies and new ones: new democracies are often unstable and may raise unrealistic expectations, which, in turn, can lead to violence. In 1999, Nigeria transitioned to democratic rule; it also adopted a new constitution that raised the allocation of oil revenues to the oil-rich Niger Delta. Since 1990, the Niger Delta had been marked by confrontations—sometimes violent—between local communities, oil companies, and the federal government over access to oil rents, as well as over environmental and human rights issues. At first, democratization and the promise of greater oil revenues had a palliative effect on the region: the number of protests fell sharply in 2001 and 2002 (Lewis 2004). In 2003, however, renewed fighting broke out when people in one of the Delta communities, the Ijaw, claimed they were not receiving their fair share of oil revenues. The 2003 election did little to resolve the issue; indeed, widespread irregularities occurred at polling stations in the Delta.

Table 7.4 displays public opinion data from three successive Afrobarometer surveys conducted in 2000, 2001, and 2003; it contrasts the responses of Nigerians in the Niger Delta, where oil revenues had risen, with Nigerians from outside the Delta. Despite the infusion of oil revenues, Delta citizens felt their situation had deteriorated—both economically and politically—between 2001 and 2003. Support for Nigeria’s democratic government plunged to very low levels, setting the stage for the separatist violence that broke out in the Delta in 2004.

### *Type of Minerals*

The sixth factor is the type of mineral resource. Minerals (and other commodities) can be divided into two groups: *lootable minerals* such as alluvial gemstones, which can be easily extracted by small teams of low-skill workers; and *unlootable minerals* such as oil, which can only be extracted with large capital investments and highly skilled labor.<sup>10</sup>

In the popular media, civil wars are commonly linked to lootable commodities, like diamonds and other gemstones. Between 1990 and 2000, four civil wars were linked to the production of diamonds, and three others were tied to the production of other gemstones; they are listed in table 7.5. Yet the outbreak of conflict is also linked to the production of unlootable minerals—in particular, oil (Ross 2006).

Different types of minerals may be linked to different types of conflict. Unlootable resources, such as oil, natural gas, copper, and gold, seem to be

**Table 7.4. Public Opinion in Nigeria**

Question	2000	2001	2003
"Are [your group's] economic conditions worse, the same, or better than other groups in this country?" (% saying worse or much worse)			
Niger Delta	13	33	60
Other Nigerians	12	39	31
"Overall, how satisfied are you with the way democracy works in Nigeria?" (% saying fairly or very satisfied)			
Niger Delta	84	47	13
Other Nigerians	84	57	37
"Is 'the ability of ordinary people to influence what government does' better now than under military rule?" (% saying better or much better)			
Niger Delta	63	56	17
Other Nigerians	67	61	43

Source: Lewis 2004.

**Table 7.5. Civil Wars Linked to Lootable Minerals, 1990–2000**

Country	Duration	Mineral resources
Afghanistan	1992–2001	Lapis lazuli
Angola	1975–2002	Diamonds
Cambodia	1978–97	Rubies
Congo, Dem. Rep. of	1996–99	Diamonds and columbite-tantalite
Liberia	1989–96	Diamonds
Myanmar	1983–95	Gemstones
Sierra Leone	1991–2000	Diamonds

Source: Author's construction.

strongly linked to the onset of secessionist wars. Consider once again the list of mineral-related secessionist conflicts in table 7.3: in all 10 conflicts, the separatist movements fought for control of regions with unlootable resources.<sup>11</sup> Also note the gemstone-related conflicts listed in table 7.5: six of the seven cases are not separatist wars. The conflict in Myanmar, which has both lootable and unlootable minerals, is the sole exception.

At least two reasons explain why unlootable minerals, but not lootable minerals, appear to be linked to separatist conflicts. First, separatist movements may thrive on exaggerated claims about the value of the rents. When locals can acquire and trade the resources themselves—as with gemstones—they may have fairly realistic ideas about the economic value of independence. However, when the economic value of the resource is harder for local peoples to estimate—as with oil and gas—nascent rebel movements

may find it easier to exaggerate the value of the region's resources and, hence, the value of independence (Collier and Hoeffler 2005).

This argument is well illustrated by the conflict in Aceh, Indonesia. Since the conflict began in 1976, the rebel movement has made grossly exaggerated claims about the value of the natural gas being extracted from Aceh. In recent years, pro-independence speakers and pamphlets have denounced the "theft" of Aceh's mineral wealth and claimed that, if independent, Aceh would be as wealthy as Brunei Darussalam, the oil-rich Islamic sultanate on nearby Borneo. This claim is misleading: if Aceh were fiscally independent in 1998 and collected all the revenues from natural gas exports, per capita GDP would have risen by about one-third, to US\$1,257. This amount would still be more than an order of magnitude below Brunei Darussalam's 1998 per capita income of US\$17,600 (Ross 2005).

The second reason is that the extraction of unlootable resources provides relatively few jobs for local unskilled workers. Because oil, gas, and deep-shaft mineral firms tend to use highly skilled labor, they employ few local, unskilled workers and generate relatively little wealth—and hence little popular support—among local communities. They often work in enclaves or, in the case of offshore oil, on rigs at sea. Sometimes, they employ foreign workers exclusively, or nearly so.

The presence of sequestered mineral firms in poor areas can generate extraordinary resentment among local communities for their failure to abide by local reciprocity norms. In many traditional agrarian cultures, rich and poor citizens have reciprocal obligations: wealthy members of the community are obliged to provide the poor with jobs, loans, and other forms of assistance; the poor must offer the rich their fealty (Scott 1976, 1985). Local communities are often obliged to surrender land and water rights to the mineral firm, yet they may get little in return. Mineral firms typically pay little attention to local norms; instead, they focus on their contractual obligations to the central government and their responsibility to create value for their shareholders. The result may be local resentment against the firm for its violation of community norms.

The extraction of lootable resources, by contrast, entails large amounts of unskilled labor and little capital: a shovel and a wood-framed metal screen for alluvial diamonds and a chainsaw for timber. Local, unskilled workers have innumerable opportunities to find jobs and earn money. Because there are few barriers to entry into the mining business and (at most) modest economies of scale, typically many small operations exist, each with relatively small profits. When a resource is unlootable, the rents

will go to the firm and the government; when it is lootable, much of these rents will accrue to local peoples.

### **Averting Conflicts**

Even in high-risk settings, governments, firms, and NGOs can do much to avert conflict. Although there is no single, foolproof formula for avoiding violent disputes, the likelihood of a conflict can be reduced by promoting transparency, developing a multistakeholder dialogue before mineral development begins, and paying special attention to security and human rights issues. Although sharing rents with the affected region may help, it is generally insufficient to prevent conflict and promote equitable development.

### *Sharing Rents*

Some might assume that disputes could be avoided if central and local authorities could agree in advance on how to divide the rents from mining or, in the absence of any explicit agreement, if the central government ensured that the affected region received a larger share of the rents than other regions. Yet violent conflict has still afflicted states that have tried these approaches.

Since Aceh began producing natural gas in 1976, the Indonesian central government has given the region a disproportionate share of development funds in hopes of averting pro-independence sentiment. When support for independence began to swell in mid-1999, the government adopted a law granting Aceh 30 percent of net public income from natural gas. In 2001, a new law raised Aceh's share to 70 percent. None of these arrangements had a measurable effect on the violence.

In Nigeria, the central government has recognized since colonial times that oil-producing regions should receive an extra share of the revenues they generate. The size of this share has been the subject of constant dispute and negotiation: between 1946 and 2003, the formula for allocating oil revenues to the states was reviewed or changed 18 times—about once every three years. The 1999 constitution established a new arrangement that gave oil-producing states a special “derivation grant” worth 13 percent of the revenues from their region. Unfortunately, this arrangement has not reduced violent conflicts among tribal groups for these funds—disrupting both the 2003 elections and the region's oil production.

### *Transparency*

Rebel groups often make exaggerated claims about the economic gains from independence. Transparency can reduce these misperceptions and undercut support for rebellion. The more that communities understand about the real costs and benefits of any mineral project—such as how large revenues are typically offset by large risks and large up-front costs—the less susceptible they will be to false appeals about the advantages of independence.

Transparency also helps restrain government corruption. Mineral-rich governments tend to be highly corrupt (Gylfason 2001; Leite and Weidemann 2001). In 2002, for example, an International Monetary Fund investigation found that the Angolan government could not account for almost US\$1 billion in oil revenue over the previous year. Investigations by Global Witness, an NGO based in London, suggest the “missing” revenues may be even larger and seem to disappear on an annual basis.<sup>12</sup> Higher levels of corruption can only fuel popular discontent with the government: when citizens in peripheral regions believe their money is being stolen, they are more likely to prefer independence. Although government corruption cannot be vanquished overnight, it can be reduced through greater transparency.

Several international initiatives are now promoting transparency in the extractive industry. Global Witness, in partnership with other NGOs, has developed a “publish what you pay” campaign, whose goal is to make mineral firms disclose all payments they make to host governments. The U.K. government has developed an Extractive Industries Transparency Initiative, which is working with a wide range of governments, companies, and NGOs to promote transparency in mineral-producing states.

There are limits, however, to the ability of donors to impose transparency measures; the case of Chad offers a good illustration. Chad is one of the world’s poorest countries and faces a high risk of conflict because of its low income and unequal division of resources: while political and military power is held by tribes from the north, oil and agricultural land is occupied by tribal peoples in the south.

Although oil was found in Chad in the early 1950s, the country only recently attracted sufficient investment to exploit it. Following extensive negotiations with the World Bank, the Chadian government adopted the Petroleum Revenue Management Law of 1999. The law specified that all the country’s oil revenues must be initially deposited in an offshore escrow account; that the account must be subjected to an independent audit annually; that the funds must be spent according to a strict formula

that allocates 80 percent to education, health care, social services, rural development, infrastructure, and environmental and water resource management; that 5 percent of the royalties must go to local communities in the oil-producing region; and that the revenue-allocation process must be supervised by a board that includes both government officials and representatives of labor and human rights NGOs.

It is unclear, however, if the Chadian transparency measures are sustainable. The World Bank suspended its loans to the Chad in January 2006, after the government adopted revisions to the Revenue Management Law that abrogated its prior commitments. Loans were resumed in April 2006 after the World Bank signed a memorandum of understanding with the government, but the effectiveness and durability of the original transparency arrangements look fragile at best.

### *Multistakeholder Dialogues*

Pouring money into a disaffected region and offering high levels of transparency may not be enough to avoid conflict; it is certainly not enough to create equitable development. A credible, ongoing dialogue among stakeholders can also help.

One reason that dialogues might be useful is that they may encourage local communities to forge *ex ante* guidelines for dividing up the rents that will flow to their region. Having such agreements in place can reduce the chance that one group or another will eventually feel disadvantaged. Much of the recent conflict over oil revenues in the Niger Delta, for example, is not between local peoples and the government, but between tribal groups—the Ijaw and the Itsekiri—over how to apportion these funds. Once a cycle of violence and retribution begins, it can be extraordinarily difficult to stop. Hence, *ex ante* agreements and working dialogues can be very valuable.

A second reason is that local communities care about many other aspects of mineral development besides rents, including environmental pollution, the loss or degradation of their lands, the absence of jobs, and the social and economic consequences of migration to their region. Typically, these concerns are far easier—and cheaper—to address before mineral development begins than after it is under way.

Ignoring local concerns can create unnecessary problems for both firms and governments. In 1997, several local communities in Ecuador sought a meeting with a subsidiary of Mitsubishi, which had opened a mine in their region; they wished to discuss their concerns about deforestation, soil erosion, and pollution. After they were apparently rebuffed for three days

by the mine's management, they removed goods and equipment from the mine site and burned the remains (Switzer 2001).

By contrast, firms that respect community concerns can reduce their security costs substantially. In Papua New Guinea, Placer Dome needed to protect nearly 70 kilometers of electrical cables that provided its Porgera mine with power. Instead of hiring a security company, it was able to protect its cable less expensively simply by paying attention to the needs of the communities that lived along the cable's path (Switzer 2001).

A dialogue should not end with a comprehensive agreement; however, it is equally important to have an ongoing forum for resolving problems as they arrive. Mineral-based development always creates problems that local communities cannot anticipate, particularly if the area is poor and isolated. In the Indonesian state of West Papua, for example, Freeport-McMoran crafted a 1974 agreement with the indigenous Amungme peoples—a preliterate culture—that offered them schools, clinics, and markets in exchange for mining rights. Yet within several years, local peoples were engaged in violent confrontations with Freeport-McMoran: despite placing their thumbprints on the contract, they were wholly unprepared for the consequences of mineral development, which transformed the landscape and raised the local population more than 100-fold. A credible, ongoing multistakeholder dialogue—instead of a “once and for all” pact, in which one side was grievously uninformed—might have given communities a constructive way to address these issues as they arose.

Well-crafted agreements can also become outdated over the course of a mining project because of generational changes among local peoples. Between 1968 and 1988, Papua New Guinea's Panguna copper mine—operated by Bougainville Copper Limited (BCL), which was jointly owned by the mining company Rio Tinto and the Papuan government—brought major disruptions to the lives of the people of Bougainville. The mine was located in a region that was unusually poor and remote, even by Papuan standards. Many locals had had little prior contact with the cash economy. The mine's social, economic, and environmental impact was pronounced: villages lost their land; thousands of young Papuan men from other islands came to Bougainville, bringing crime and alcohol abuse with them; local rivers became unfit to drink from; fish disappeared from most of the Kawerong-Jaba river system, covering some 480 square kilometers; and hunting and gathering became more difficult, given the pollution and environmental degradation (Polomka 1990; Thompson 1991).



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BCL provided compensation payments to locals for land it leased or damaged. It also made substantial efforts to contribute to the Bougainville economy: it instituted training and scholarship programs, which by 1980 produced a workforce that was 80 percent Papuan and 30 percent Bougainvillean, and it helped establish a wide range of local business ventures, some of which proved successful (Wesley-Smith and Ogan 1992). The development of the mine also led to the construction of roads, to expanded access to education and health, and to a sharp rise in the cash economy. By the late 1980s, BCL claimed that the Panguna operation directly or indirectly provided incomes to 30,000 of Bougainville's 150,000 people (Carruthers 1990).

Yet community support—or at least acquiescence—for the project ultimately deteriorated as provisions in the original contract became outdated. When the original lease was signed in 1967, BCL agreed to a compensation package for local landowners. It was later revised many times in favor of the landowners, the local community, and the regional government. By the late 1980s, this arrangement had come under attack by a new generation of Bougainvilleans, who claimed it was unfair for two reasons. First, only primary landholders received BCL compensation, whereas those who held subsidiary rights—a common practice under traditional tenure systems—received little or nothing (Wesley-Smith and Ogan 1992). Second, there were now intergenerational problems: the money for land compensation went to 850 primary landholders and family heads, but their children, who had come of age during the mining lease, had less direct access to these funds. Because many of the island's traditional cultures had strong egalitarian norms, even small degrees of inequality provoked strong reactions.

After several years of nonviolent disputes over these issues, a small group of frustrated young men formed the Bougainville Revolutionary Army in late 1988 and launched a series of attacks on BCL property. By May 1989, they had forced the Panguna mine to close. The ensuing conflict lasted until 1997 and may have claimed more than 10,000 lives.

In theory, a dialogue need only include local community leaders and the government, which has formal responsibility for handling these issues. In practice, mineral firms must often play a central role in these dialogues. Firms will be blamed for—and will certainly suffer the costs of—conflicts that break out between locals and the national government; hence, they have a strong incentive to find solutions. A 2001 survey found that political instability is a major problem for the mining industry: 78 percent of the

firms surveyed said that over the previous five years, political instability—particularly armed conflict—had caused them to refrain or withdraw from otherwise sound investments (Switzer 2001).

Transnational mineral firms can bring important skills to the dialogue process. They have extensive experience with extractive projects and their many externalities; governments often do not. Mineral firms have long time horizons and execute complex, multidecade projects; many governments cannot plan beyond the next election. Governments may also have little credibility in the eyes of affected communities; sometimes, it is easier for outsiders, such as mineral companies, to negotiate with locals. In apartheid South Africa, where the government was viewed as illegitimate among the majority-black population, BP and Rio Tinto formed direct, bilateral partnerships with local communities.

Some mining firms have used dialogues to find innovative ways to head off conflicts. In the Las Cristinas area in the south of the República Bolivariana de Venezuela, Placer Dome has allocated part of its concession to local, artisanal miners and helped train them in mining techniques and business management. In the Philippines, WMC Resources helped indigenous communities gain official recognition from the government, so they could obtain royalty payments and legal protection for their ancestral lands (Switzer 2001).

NGOs can also play a key role in these dialogues. They often have experience in protecting the rights and interests of local communities, which the communities themselves may lack. They may have a level of credibility among local peoples that neither the government nor the mineral firm enjoys; this credibility can be essential to the dialogue's success. NGOs can help administer local development programs that are funded with mining revenues; monitor and sanction the activities of firms, the government, and other actors; convene adversarial parties; and provide early warnings about impending conflicts.

### *Human Rights and Security*

Large-scale mining can lead to conflict when it attracts police and military forces that engage in predatory behavior. In Indonesia, the government has required many large mineral firms to make regular payments to military forces stationed nearby. These military forces often extract payments from others who live or work near the mine site. Occasionally, these military units will serve a useful purpose, but much of the time their presence is simply a pretext for extortion. In several cases, military

units may have staged or facilitated attacks on mining firms to extract additional funds.

Even when they refrain from extortion, poorly trained and poorly compensated soldiers and police officers may heighten animosity toward the government and the mining operation. The Indonesian government placed its Military Operations Command (*Kolakops*) for the province of Aceh directly in Lhokseumawe, home of the natural gas facility, instead of in the provincial capital. The large military presence created innumerable tensions in the region. Soldiers assigned to protect the Lhokseumawe facility have periodically been involved in the abduction, torture, and execution of Acehnese in neighboring areas, whom they suspect are sympathetic to or associated with GAM. The presence of the military at the facility—and their disregard for human rights—helped spur popular support for the rebels and animosity toward Mobil.

A recent project by BP in West Papua, Indonesia, employs innovative techniques for protecting human rights and avoiding abuses by security forces. West Papua is a high-risk region for mineral development, because of its extreme poverty, mountainous terrain, peripheral location, and sharply distinct culture and history. Indeed, the large copper mine operated by Freeport-McMoran near the town of Timika has been the site of almost constant unrest, in part because of the Indonesian military presence.

To avoid replicating these problems at its new Tangguh natural gas site, BP has engaged in extensive consultations with local communities since the early days of the project. After BP determined that the optimal site for its facilities was near a village of 127 families, it enlisted the World Bank's help in forging a relocation agreement with the community—along with plans for local hiring, restrictions on immigration, sustainable economic development, cultural preservation, and biodiversity conservation.

BP has also insisted that Indonesian security forces remain away from the project area; instead, BP is training local Papuans to create a community-based security force. To give its policies greater credibility, BP has sought independent evaluations of its operations: it has carried out an environmental impact assessment and a human rights assessment and has established an independent advisory panel to subject the noncommercial parts of the project to external scrutiny. Both local and international NGOs have played important roles in developing, monitoring, and critiquing the project. When disputes between villagers, BP, and the government have arisen, they have been resolved nonviolently, often through dialogue and compromise.

## Conclusion

The mineral-exporting states of the developing world are troubled by economic volatility, corruption, authoritarian rule, and violent conflict. This chapter has discussed one facet of this resource curse: the conflicts that commonly arise when resource wealth is unevenly distributed around the country. Mineral-based conflicts can create self-perpetuating inequality traps: when high levels of inequality—a common feature of mineral-based development—lead to violent conflict, such violence will deter investment in nonmineral sectors (such as manufacturing and agriculture) that could promote more equitable forms of growth. These inequality traps, however, can be short-circuited by wise policies—in both governments and mineral firms—that promote transparency, multistakeholder dialogues, and special attention to human rights issues.

The problem of conflict in the mineral-exporting states has global repercussions; it has only recently begun to receive the attention it merits. NGOs have taken the lead in publicizing this issue and have placed the “publish what you pay” issue on the global agenda. The United Kingdom’s Extractive Industries Transparency Initiative and the Group of Eight have also begun to address the issue, while the World Bank—having just completed a two-year review of its policies in the extractive sector—has pledged to support these initiatives. Still, much remains poorly understood about the resource curse, and many of the problems that face these states remain unaddressed.

## Notes

1. The term *minerals* is used here to include oil, gas, hard-rock minerals, and gemstones.
2. Of course, mineral-exporting states confront many other challenges. See Auty (2001); Gelb and associates (1988); Ross (1999, 2001); and Stevens (2003).
3. The data are drawn primarily from the World Bank’s (2002) publication *World Development Indicators 2002*. Missing values were replaced by values from earlier years or from other sources.
4. For a review of these and similar studies, see Ross (2004b).
5. Other important arguments linking mineral wealth to civil war include oil wealth leads to state weakness, which in turn causes civil war (Fearon 2004; Fearon and Laitin 2003); mineral wealth may encourage foreign intervention, which triggers or exacerbates internal conflict (Ross 2004a); trade shocks,

which disproportionately affect commodity exporters, may lead to civil war (Humphreys 2003); and mineral dependence may reduce a country's level of internal trade, which in turn could diminish the conflict-alleviating properties of commercial interaction (Humphreys 2003). Also see Keen (1998), Klare (2001), Le Billon (2001), and Switzer (2001).

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6. On natural resources and inequality, see Easterly (2002).
7. For sources and coding rules, see Ross (2004a).
8. Indeed, the founder of GAM, Hasan di Tiro, was a businessman who failed in his effort to win a bid for a work contract at the natural gas facility (Robinson 1998).
- [[AQ: Correct? Or 2005?]]
9. Not everyone agrees; some studies find that once income is accounted for, political institutions have no measurable effect on the likelihood of civil war. See, for example, Collier and Hoeffler (2004) and Fearon and Laitin (2003).
- [[AQ: Correct? Or 2005?]]
10. The distinction between lootable and unlootable commodities was developed by Collier and Hoeffler (2004) and Le Billon (2001).
11. In Myanmar, the separatist regions had both lootable (gemstones) and unlootable (tin) minerals.
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12. On Global Witness's investigation into Angolan state finances, see <http://www.globalwitness.org/campaigns/oil/angolagate.php>.

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