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**Strategic Drivers of the Mining Industry:
From Enclave Production to Integrated Development**

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***The views expressed in this paper are those of the authors and do not necessarily reflect the views of their institutions.**

1. Introduction

The paper analyses the evolution of the strategic drivers of the mining sector over the last half century, which has been guided by a varying and expanding list of motivations. For the most part, these drivers—defined for the purpose of this paper as forces that can impact the outcome of a project or the reputation of a firm to a critical extent—have followed global trends and public opinion, but they also have been shaped by the significant, often dominant role that the mining sector plays in many economies. While the mining sector used to be primarily motivated by the first pillar of sustainable development—i.e. the economics pillar—, in the 1970s the second environmental pillar became an important factor in decision making, and in the 1990s the third social pillar emerged as a major driver. The entrance of new strategic drivers has also had considerable impact on technological and organizational developments in the mining industry; however, technological changes, driven by cost reduction considerations, have in turn impacted the strategic drivers of the industry, resulting in the need for further technological and organizational developments.

In the 21st century, a fourth pillar has emerged as a potential strategic driver—i.e. governance. For reasons of national sovereignty, governance is not usually included as a pillar of sustainable development; however, it has become increasingly clear that good economic, environmental, and social behavior of the industry will not necessarily lead to positive, lasting impacts if the political situation is not supportive. It is no longer considered acceptable for firms, particularly in non-renewable resource industries, to ‘steer clear’ of governance issues if the system is such that most of the benefits will be captured by the elite groups in the host country. Nevertheless, the expected behavior of the mining industry with respect to the fourth pillar of sustainable development remains unclear. In this paper, a few suggestions will be given in this regard.

The organization of the paper is as follows. The next section continues with a brief history of strategic drivers until the early part of this century, while section 3 describes the current situation with respect to the mining industry and the mineral rich countries. Section 4 contains an analysis of the new and continuing strategic drivers of the industry, and the implications for the industry of the emergence of the more recent governance pillar. It will be argued in this section that the evolution of the industry over a historically very short period of time has been from enclave production to full economic integration; moreover, in some countries mining is viewed as the only realistic ‘engine of growth’. However, there are governance and political issues that may prevent the mining industry from making the desired contribution. In Section 5 the responsibilities of and pressures on the mining industry are discussed when a country looks beyond the growth objective and perceives the mining sector as the ‘engine of sustainable development’. The last section concludes with a discussion of the road ahead, with the emphasis on overcoming the governance impediments to sustainable development in the mining sector and the need for all stakeholders to take into account the global repercussions of their decisions and behavior.

2. A Brief History of Mining's Strategic Drivers

For most of the 20th century the behavior of the mining industry was driven almost solely by the need for companies to make profits. With the exception of the command economies and several others involved in the wave of nationalizations in the 1970s and 1980s, governments let mining companies go about their business as long as they generated foreign exchange, tax revenues and employment. It is important to highlight—foreshadowing future developments—that mining companies historically provided social services (and often housing) to its employees, although this practice was already in decline in industrialized countries except in very remote locations.

The second driver of the mining industry, the environment, made its first appearance sometime in the 1960s when the general population became aware of the environmental degradation associated with many, if not most, industries. The mining industry, in particular, was singled out as a poor 'environmental performer'. This was partly because of the highly visible environmental degradation associated with on-going operations but just as important was the legacy of abandoned mine sites, causing problems of toxic materials, acid rock drainage and general unsightliness. Historically, very little had been done to reclaim or remediate mine sites after closure.

In the 1970s the type of behavior that was acceptable changed rapidly for the mining industry, at least for the publicly visible large companies in Europe, the USA, Canada and Australia, albeit much less so in the rest of the world. Legislation was introduced around the globe—first in the developed countries and with a delay in the developing countries, including in Africa—defining acceptable emission and cumulative levels of various pollutants, strict regulations for handling tailings were put in place, and remediation soon became required both during the lifetime of the mine and post-closure. Note that the details of environmental regulations for specific operations were established with national governments, with little or no involvement of the affected communities. Nevertheless, environmental pressures had profound technological repercussion for the mining industry and, arguably, moved it into a position of industrial leader in the development of 'environmentally friendly' technology and technological processes. In addition, there were implications for the organization of mining companies and their specific operations—environment departments and an increased focus on community relations. However, that the environmental performance of medium-scale and mechanized small-scale companies, particularly those that operate only at the national level in low-income countries, often continues to be in need of considerable improvement.

The third pillar of sustainable development, social and cultural issues, only began to play a role in earnest as a strategic driver of the mining industry in the mid-1990s. Like the environmental pillar, social and cultural issues were driven by global trends and changing public opinion. Of particular importance were the new sensibilities attached to the rights of indigenous peoples—on whose lands an increasing percentage of new mining

operations were located—and affected local communities in general. However, this is at best half the story, which in fact began in the 1970s with the technological change driven by the need to reduce costs and be able to exploit increasingly marginal deposits resulting in strong improvements in technology in mining and the movement to more and more open pit operations. Most observers at the time—as well as most governments—did not notice that the mining industry had been transformed into a very technologically complex sector itself over the course of the 20th century. These factors meant that a mining operation employed considerable fewer people than previously, reducing the benefits communities received from mining. Given their often isolated and usually poor status, the misgivings of communities only came to the fore when new information and communication technologies allowed them—usually through non-governmental organizations (NGOs)—to air their complaints to the world and have pressure put on the industry and their governments.

What is most remarkable about the social and cultural pillar is that by the early 2000s its acceptance was practically universal by large mining companies, as summed up in the influential MMSD report, *Breaking New Ground*, (Linda Starke (ed.) (2002), *Breaking New Ground: Mining, Minerals and Sustainable Development: The Report of the MMSD Project*, Earthscan, London, U.K). In fact, momentum in this area has grown so rapidly that the approach changed from benefits to local communities to long-term sustainable development of local communities. The CSR arms of most companies have become much more prominent and many companies have established special CSR programs, foundations or trust funds to help move in this direction. Developments in Sub-Saharan Africa have been particularly prominent in this regard, partly due to the need to meet the obligations of broad-based black economic empowerment legislation in South Africa but also due to the fact that governance gaps—as discussed in section 4—are in general larger in Sub-Saharan Africa. Table 1 contains a sample of these programs.

Now this paradigm shift has moved even further into questions on and analysis of how mining can act as an engine of community/regional development and even have an ‘engine of growth’ type impact through cooperation at the national level or regional level (as in southern Africa or west Africa).

In essence, the dominant strategic driver of the mining industry has turned back to economics again, but a much more complex type of economics than 30 years ago, one with a national and a local/district/provincial focus and even more recently a regional or sub-regional level. Mining operations can no longer set themselves up as enclaves but in fact are expected to generate upstream and downstream linkages, which can eventually result in the creation of industrial clusters.

3: The Current State of the Mining Industry and the Mineral Rich Countries

3.1 The mining industry

The majority of the large, international mining companies have signed on to the sustainable development charter (ICMM), which compromises them to following good environmental and social practices, as well as supporting local community development. Environmental mitigation and integration are fully accepted; in fact, the emphasis has moved away from remediation to avoidance of environmental damage. While corporate social responsibility (CSR) and the importance that mining operations leave a positive legacy are also accepted, the duties and responsibilities of the companies are not as clear as in the environmental area. Moreover, the responsibilities of the third social and cultural pillar of sustainable development are likely to become even less defined. While most mining investment in the 1990s were brownfield expansions, most of the large mining investments that are taking place or are likely to take place in the next ten years are in greenfield areas with limited infrastructure and, generally, in countries with low socio-economic indicators.

As noted in section 2, economic concerns have again become the dominant strategic driver of the mining industry, but in a much more complex context. Two of the most interesting indications of the change in the nature of the economic drivers are that, first, after several decades of countries competing to attract investment, the companies are now competing for access to mineral rights, often in countries that they would not have considered to enter 5 or 10 years ago. It will be argued in section 4 that the entry of companies into these “frontier” countries—many of which are in Sub-Saharan Africa—is giving rise to a new strategic driver, issues concerning governance, the fourth pillar of sustainable development. Second, there is a greater recognition that mining deposits and/or ancillary infrastructure often cross national boundaries so efficient exploitation often entails forging partnerships with more than one country.

Behind all of this is the rise of the BRICs (Brazil, Russia, China and India), led by China, as major investors in the global mining industry. Mining companies from the BRICs are found around the world but they are usually not part of international agreements like the Extractive Industries Transparency Initiative (EITI) or the ICMM charter, and there is a lack of information about their activities and contracts with low income country governments. It is also likely that an important strategic driver of some of these companies is the need to ensure a steady supply of mineral products to their rapidly growing economies. Another feature of investment by the BRICs, China in particular, is to offer as a ‘package’ very large infrastructure investments in return for access to mineral deposits, a new business model for the industry.

3.2 The mineral rich countries

Many reforming economies, developing and transition, have made major strides with respect to macroeconomic stabilization, including fiscal budgets, inflation, the balance of payments, and realistic exchange rates, the latter being a key macroeconomic concern for most mining companies. Most countries have made some governance reforms, but mainly at the central government level, and there is still a long way to go for the majority of developing and transition mineral rich countries. Nevertheless, the investment flows into

these countries indicate that most of these economies have progressed enough with respect to macroeconomic and governance issues that mining companies are ready to commit funds. The result of this is that the governments of the mineral rich countries see mining development as one way to reactivate the economy in the short-term to medium-term. However, they do not want the old model of enclave style mining but want mineral development that will maximize the economic linkages within the country. As noted in section 2, mining may be looked upon as a country's engine of growth and, in fact, governments often consider that a strong performance in the mining sector can act as an inducement to other industries.

Table 2 looks at the contribution of the mining sector to macroeconomic variables in a selection of African countries from 2000-2007. Note that these figures underestimate the contribution to the continent as they do not capture the full impact of the higher prices in recent years, particularly since 2006, nor the large amount of investment that has come on line in recent years, particularly in countries in which mining has not historically played a large role. Table 3 shows the current and projected impact of the mineral sector in Tanzania and Burkina Faso, two emerging mining countries, based on existing and projections of probable investments.

Finally, as the metals price boom continues, and all indications suggest an extended period of well above average real prices (even if not at the levels of 2007-2008), countries are taking a new look to increase their fiscal take. There is pressure to renegotiate existing mining contracts and new laws are being written to deal with new contracts. In particular, there is a movement towards sliding scale taxes or royalties, where the percentage of mining revenues that goes to the country's treasury moves up and down with mineral prices. These extra revenues could be used to support the country's objective in the mining sector—that is, contribute to broad and sustainable development—by investing in training, education, infrastructure, and other activities that are complementary to private investment.

4: The New Governance Driver

One of the outcomes of the Extractive Industry Review (EIR) undertaken for the World Bank in 2003-2004 was a call for governance preconditions to be fulfilled before mining (or oil and gas) development would take place in a country. While this part of the EIR was not incorporated in the recommendations, the reality is that most large mining companies have to consider local governance issues at the moment they decide to invest in a low income country. These will often come out in the tripartite negotiations and, if they are avoided, the company will be forced to deal with them later, often in much more difficult conditions. In essence, if the mining operation is going to contribute to sustainable development at the local level, the mining company will often have to get involved in local governance issues.

The situation is more complex at the national level and, in fact, may center much more on corrupt governance rather than weak governance. The main question here is if it is the company's responsibility to undertake a political economy analysis of a country in which

it is considering an investment in order to determine who is likely to reap most of the benefits from its operation. Moreover, if the answer is not a positive one, should it decline to invest in the country? In effect, the Extractive Industries Transparency Initiative (EITI) is the recognition that mining companies do have to deal with governance issues at the national level.

Finally, there are more and more opportunities that are best approached from the regional or sub-regional level. However, if countries have significant differences in their legislation or there is a lack of coordination on infrastructure issues, it is difficult for mining companies to move forward if these regional governance issues are not dealt with. Large mining companies, which are used to acting on a global level, can potentially play an important role in promoting cooperation in these types of situations.

In sum, governance issues are rapidly turning into a new strategic driver of the mining industry, changing the concept of sustainable development in a complex manner. More importantly, if political issues are the fourth pillar of sustainable development, can mining operations afford not to have them as a strategic driver?

5. Mining as the Engine of Sustainable Development

While a great deal of progress has been made, in a number of countries governance has not reached the point where progress is on a steady positive path or, in most cases, where the sustainability of improvements is guaranteed. Many of these countries have abundant mineral wealth and mining is one of the few real options to kick-start the economy.

However, these countries do not want their mining sectors to simply kick-start growth, they see it as the engine of sustainable development. This means no more mining enclaves, but a sector that stimulates linkages to other activities and has strong multiplier effects on the economy, as a large percentage of the income generated in the sector is spent domestically. A mining sector that is the engine of sustainable development maximizes the employment of nationals, maximizes local and domestic procurement, and stimulates forward linkages. Each of these outcomes will depend heavily on training in technical skills and the ability to provide quality inputs on-time, to manage small businesses, and to find and exploit new markets.

Infrastructure development will be crucial. It will be essential to mobilize additional capital to ‘piggyback’ on the infrastructure being developed for the mining operations. This infrastructure will not only help the country take advantage of linkages to and from the mining sector but will open up opportunities in other industries, including agricultural exports and tourism. The development of a strong infrastructural backbone will be the key to the development of industrial clusters, often beginning with mining related activities, as has occurred, for example, in Chile (Antofagasta), Canada (Sudbury), and South Africa (Johannesburg). The ultimate goal is for mining clusters to attract or spin-off into other industrial clusters, using the technological, innovative, and management capacities that were first developed in the mining sector.

However, for many countries, it will be difficult for the country to bear the burden of the infrastructure just for their own needs. Even with the recent very high commodity prices, complex multibillion dollar mineral projects often did not materialize, including investments in alumina/aluminum projects in Guinea and Cameroon, iron ore projects in Guinea, Senegal and Gabon, and manganese in Burkina Faso. For these projects to be viable, it is necessary to build extensive energy and transport facilities, which could have been leveraged not only by other national projects, but also by other investments in the region. This approach—in which a few high yield projects collectively support ancillary infrastructure development and often requires cross-border collaboration—is currently being undertaken in the Moatize-project in Mozambique/Malawi and in the Inga power and aluminum project in the DRC.

The story in the preceding paragraphs is all predicated on meeting the requirements for sustainable development—pro-growth policies that emphasize the need for widespread social benefits with proper environmental stewardship if these policies are to be sustainable. It is also implicit in the story that the fourth pillar of sustainable development, governance, is being managed well. An in-depth analysis of these linkages can be found in ICMM (2006), “Synthesis of 4 Case Studies: The Challenge of Mineral Wealth: Using Resource Endowments to Foster Sustainable Development.”

However, this is rarely the situation in low-income countries. Governance is usually weak and political goals are often complex and guided by the desire to remain in power or, even worse, the desire for self-enrichment. If a mining operation is not going to be an enclave, the company will often have to be quite proactive and work with communities to build the skills necessary for mine employment and the provision of goods and services. The mining company will often have to be involved in the development of a local or district infrastructure plan, including the need to ensure that enough of its fiscal contributions end up supporting the local communities and surrounding region. Moreover, if local governance capacity is particularly weak, it may have responsibility for the new infrastructure, whether the mine needs it or not for its own operations. The movement from linkage activities to cluster development also depends on the creation of a large amount of social capital. Again, the mining industry may have to play a leading role in this regard through the works of foundations.

6. Conclusions and the Road Ahead

It has been argued in this paper that economics—the first pillar of sustainable development—has once again emerged as the dominant strategic driver of the mining industry. However, the environment in which it operates looks very different than it did two or three decades ago. It is operating in countries with governments that are mostly supportive of the market system and private property rights and are cognizant of and dealing with sector-related macroeconomic issues. Large mining companies systematically factor environmental and socio-cultural responsibilities—the second and third pillars—into their operations, and they are striving to leave a positive legacy.

The outstanding issues are political in nature: Can mining operations leave a positive legacy in a situation of weak governance and/or a corrupt political system? What can and should mining companies do to actively promote good governance at the national, local and even regional levels? It can be argued that the mining industry has never been able to avoid political issues, and in fact, the real new development in this regard is that the industry can no longer afford to be seen as an accomplice to corrupt governments and their leaders. It must be able to show that it has taken the political issues on board and is contributing to sustainable development or working for change. Facilitating regional or sub-regional dialogues for the efficient development of the mining sector as well as opening up other trade opportunities is one area where large global mining companies may have a comparative advantage.

The road ahead

Developments in the mining sector are driven by global trends and thinking but are played out in national or sub-national contexts. The focus of the mining companies and international organizations (including international NGOs) involved in the sector is global in nature, and they are well-equipped to deal with global issues. However, while these stakeholders to varying degrees will be concerned about the environmental, social, cultural, or political implications of a mining activity, the host government may be primarily concerned with getting and distributing as much as the rents as possible to its supporters. Moreover, vulnerable or less well-connected groups in the host country may have little impact on any decisions that take place with respect to the costs and benefits of mineral investments. It is precisely in such situations where the decision of a mining company to proceed with an investment is most likely to be come under criticism.

Currently, the main method being used to overcome the conflict between global issues and national sovereignty in the mining industry is international initiatives. EITI is the most obvious one as its goal is to track both the payment and receipt of fiscal revenues from extractive industries to ensure that all fiscal payments do go into government revenues. While this does not ensure that they will be well used, it will make their distribution easier to track. As more and more companies adhere to EITI, more and more governments will feel under pressure to do the same, and vice-versa.

At the community level, good examples of international governance are initiatives like the mining ombudsman of Oxfam's Community Aid Abroad Australia or the recent initiative on CSR of Canadian extractive companies operating in developing countries, "Building the Canadian Advantage: A Corporate Social Responsibility (CSR) Strategy for the Canadian International Extractive Sector". In the Australian case, individuals or communities with complaints about the activities of an Australian mining company in another country can bring them to the attention of the ombudsman, who will then undertake an investigation that considers the viewpoints of all parties (<http://www.oxfam.org.au/campaigns/mining/ombudsman/index.html>). The Canadian initiative includes an independent ombudsman office to provide advisory services, fact finding and reporting on complaints about Canadian extractive companies in developing

countries. A tripartite Compliance Review Committee determines the nature and degree of company non-compliance with Canadian CSR standards, based upon findings of the ombudsman, and makes recommendations regarding appropriate responses (Advisory Group Report (2007), “National Roundtables on Corporate Social Responsibility (CSR) and the Canadian Extractive Industry in Developing Countries”, March, Ottawa, Canada).

While the objective of these initiatives is to allow for a forum for complaints about companies by vulnerable groups, they can also be used to put pressure on the host country governments. For example, the Canadian CSR strategy recognizes that extractive companies are often operating in countries with weak governance capacity, corruption and even armed conflict. “Improving resource governance, transparency and accountability in developing countries is critical to ensuring that the extractive sector contributes to poverty reduction, and creates a business and investment environment conducive to responsible corporate conduct in countries where Canadian companies operate. Clearly, if this recommendation is implemented, the Canadian mining industry, at least, will be working in a situation that goes far beyond EITI. It is conceivable in the future that large mining companies would only work in countries who agreed to a program similar to the one outlined above.

There is also a need for a facility to advise governments of low-income countries when negotiating mining contracts with large multi-national companies, including ones that are partially owned and supported by governments. The mining companies have considerable experience negotiating in a global context; governments often do not, and there is a need to level the playing field. Through its technical assistance projects, the World Bank currently plays part of this role by working with governments to develop legal/fiscal frameworks and standard contracts. In addition to these technical assistance projects, the World Bank has recently established a multi-donor trust fund, “The Extractive Industry Technical Advisory Facility (EI-TAF)”, which has as one of its main objectives to provide rapid response advisory services to countries in need of assistance in negotiating contracts in mining, oil, and gas (<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTOGMC/0,,contentMDK:22366721~pagePK:148956~piPK:216618~theSitePK:336930,00.html>).

In sum, if mining is to be the engine of sustainable development for a low-income country, the requirements for each of the four pillars will have to be met. The responsibilities of the mining industry for the economics and environmental pillars are clear and they are more or less known for the social pillar. However, the extent to which CSR extends to governance issues and, in effect, becomes corporate social and political responsibility, is still an uncharted path. Most companies would rather leave the fourth pillar to governments but the pressures are increasing and not just at the local level but also at the national level. Civil society, mining companies, governments, and international organizations all have a contribution to make.

Annex 1

Backward, forward linkages and industrial clusters

As discussed above, one of the most important indicators of the success of a mining operation is its ability to generate backward and forward linkages or contribute to the development of an industrial cluster of activities centered on the operation(s). In this section examples are presented of backward and forward linkages and a mining centered industrial cluster.

Backward Linkages in South Africa

The Anglo Zimele (AZ) Empowerment Initiative is a program established in 1989 by Anglo American South Africa, which is primarily focused on backward linkages through the development of small- and medium-sized enterprises (SME). AZ provides skills development and strategic knowledge, including guidance on corporate governance, to the firms it supports, as well as investment funds where necessary. It is primarily involved with historically disadvantaged South Africans. While AZ is heavily involved in firm at beginning, once it can stand alone, it sells off its stake in the company. During 2005, for example, AZ invested in 10 new empowerment ventures. These included ScanMin Africa, which supplies and supports real-time analysers for mining and mineral beneficiation processes, Springbok Trucking Company, Langa Lethu, a security and risk management company, and Tyre Corporation, a tyre manufacturer. Currently AZ is investing in 39 SMEs that employ over 3000 people.¹

Forward Linkages in Madagascar²

Over 50,000 individuals and rising are involved in the gemstone industry in Madagascar. Residents are now being trained in different aspects of gemology—including training of trainers—both to increase the value received for its gems but, more importantly, to greatly reduce the 97% of stones that were leaving the country in a rough state as recently as 2001. The Institute of Gemology was opened in 2004 with support from the World Bank and the Government of Madagascar. The institute provides all the skills that are needed to increase domestic value added, including cutting, valuation and marketing. Training is offered at all levels, even one day courses on gemology in remote villages. In 2005, the first of a planned number of regional cutting schools was opened in Antsirabe. In 2007 a jewelry making school will also open in Madagascar, further enhancing the development of forward linkages.

Industrial Cluster and Beyond in Chile

¹ For more information on Anglo Zimele, go to: <http://www.zimele.co.za/>.

² For more information on gemstone processing and marketing in Madagascar, go to http://www.miningreview.com/archive/mra_4_2005/2.pdf.

Region II in Chile is one of the world's best examples of an industrial cluster built around a mining industry, in this case primarily copper. In the development of this cluster, centered on Antofagasta, mining companies have played a prominent role in infrastructure development and direct and indirect skill training for mining, including training in the work habits and management skills necessary in an advanced industrial economy. Mining companies work with new suppliers on quality enhancement and currently 50% of mining industry's procurement comes from Region II. Fiscal revenues generated by the mining sector have been targeted for education, including tertiary, for mine employment and related industries and the provision of finance for suppliers, primarily for companies trying to upgrade performance to obtain ISO 9000 and 14000 certification.

Chile is not content, however, with the vast progress made so far. The ultimate goal is to expand or spinoff the mining industrial cluster into other activities that will become increasingly independent of mining. The objective of the new Innovation Fund (before Congress), which would be funded by mining taxes, is to identify and accelerate the development of dynamic comparative advantage in strategic clusters in Chile. Sixty percent of the funds in the proposed Law would be spent in mining regions.

There have been a number of contributing factors to the success of Chile's mining cluster. The country has had fiscal and macroeconomic stability for many years, including the use of a copper stabilization fund to smooth out revenues coming from the copper industry. There has been social stability for nearly 20 years, partly due to large increases in funding of social programs. The programs of the Government of Chile have placed a strong focus on literacy, education, and poverty reduction. Region II has the lowest poverty rate and highest literacy and education rates in the country. It is important to emphasize that the success of the mining cluster is not due to regionally targeted redistributive policies but on a strategy based on generating broad-based employment opportunities

Table 1: Selected Socio-Economic Programs funded by Mining Companies in SSA

Mine or Mining Company	Country	Name of Program	Brief Description of Operations	Geographical coverage
Anglo-American	South Africa	Anglo-American Chairman's Fund	The fund's size and experience allow it to work on over 300 projects ranging from small-scale, grassroots initiatives to important capital building projects and major service delivery programs.	Beneficiaries in all RSA, not just mining locations.
Debswana and Debeers	Botswana	Debswana Corporate Social Initiative	Thematically road based grants with sub-program (Diamond Trust) that funds large-scale community programs	70% beneficiaries entire country, 30% affected communities
Rio Tinto-Rossing Uranium	Namibia	Rossing Foundation	Focuses on education, health, innovation, and LED; often passes programs on to government.	Mine site, company HQ, areas where workers migrate from
Newmont	Ghana	Newmont Ahafo Development Foundation	Thematically broad-based program but special emphasis on skill development for mine employment and mine procurement.	Communities near mine site.
Freeport-McMoran, Lundin, Gecamines – Tenke Fungurume	Democratic Republic of Congo	TFM Foundation	Comprehensive programs address basic community needs and infrastructure, including access to clean water, quality health care and education, micro-lending, and opportunities for income generation.	Communities near mine site.

Source: Mining companies' websites.

Table 2: Contribution of Mining Sector to Fiscal and Export Revenues for Selected SSA Countries (unweighted averages 2000-07)

Country	Fiscal Revenues (% of total revenues)	Export Revenues (% of total exports of goods)
Democratic Republic of Congo	18.3 (2007)	54.0
Ghana	4.7	34.5
Guinea	19.3 (2008)	85.6
Sierra Leone	1.0	64.1
Zambia	8.9 (2007)	66.2
Namibia	7.7	60.3
Botswana	44.0	77.5
South Africa	1.8	21.2
Liberia	8.3	51.9

Source: IMF estimates

Table 3: Mining Statistics for Burkina Faso and Tanzania (various years as noted) (\$US)

Country	FDI in Mining	Exports 2000	Exports 2008	Projected Exports 2015	Fiscal Revenues % of GDP, 2008	Projected Fiscal Revenues, % of GDP, 2015
Burkina Faso	900m (2005-10)	<20m	100m	1.6b	1.8%	30%-40%
Tanzania	1.7b (2005-07)	100m	840m	1.4b (gold only)	3.7% (2007)	7%

Source: Alan Roe estimates (Tanzania), ICMM; Gary McMahon estimates (Burkina Faso), World Bank