

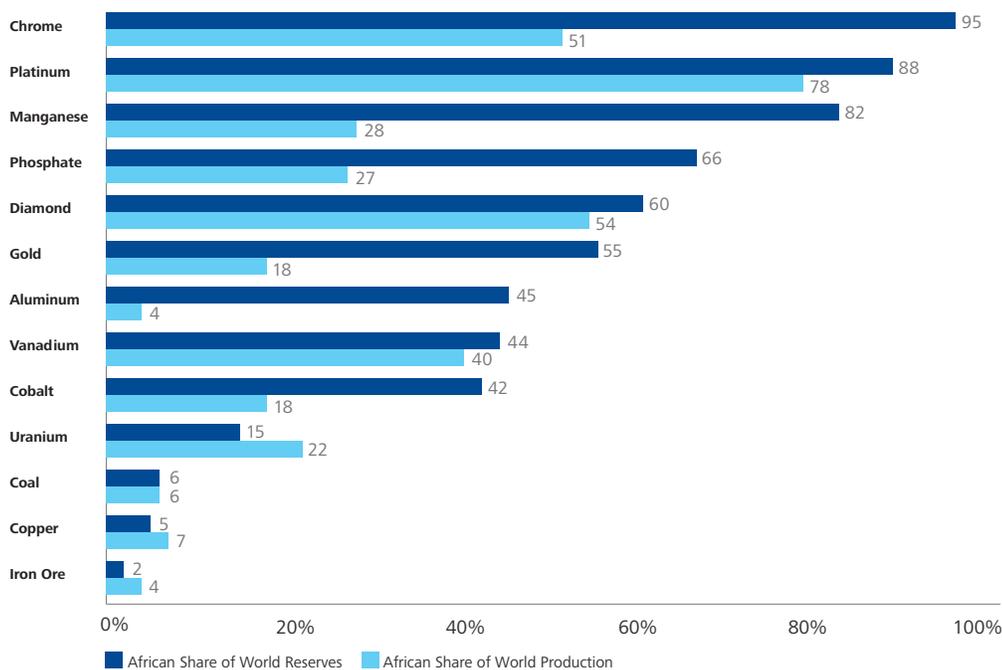
## Mining in Africa: How Inclusive Solutions Can Mitigate Risk

BY ANDREW LANE AND RICCARDO REGGIO

*The mining industry faces considerable challenges, including a combination of burgeoning commodity demand, finite existing supply, and rapidly rising commodity prices. Africa offers an area full of potential, but also poses substantial risk to mining companies, both below and above the ground. The above-the-ground risks—which include high levels of political instability and corruption, opaque regulations, and poor enforcement capacity—are especially vexing and can be quite costly. To mitigate above-the-ground risks and effectively compete with sovereign-backed firms, mining companies looking to do business in Africa should take an inclusive approach to development that addresses the needs of not only the companies themselves, but also the relevant governments and communities in which they operate. In this article, the authors explore how mining companies can identify, develop, and launch inclusive solutions that benefit all stakeholders and help reduce the above-the-ground risks inherent in developing markets such as Africa.*



Figure 1: Africa’s share of global mineral reserves and production (%)



Source: “Trends in sustainable development,” United Nations website, April 2010; “How the Introduction of Exchange Trading Can Boost Botswana’s Resource Sector,” Botswana Resource Conference, June 2010. “The GCC and Africa: Growing Economic Complementarities,” Gulf Research Center, December 2010, Department of Minerals and Energy of the Republic of South Africa (Mubuza, 2009), (Twerefou, 2009).

The mining industry faces considerable challenges that make running a mining company more difficult than ever. High quality, geologically easy-to-mine resources in easily accessible locations have been long identified and exploited; this requires miners to venture into new, increasingly remote, climatically difficult locations to find still rich mineral deposits. The rapid industrialization of India and China is creating a surge in demand for raw materials that far exceeds the industry’s ability to supply, causing prices to escalate rapidly. Higher prices and scarce supply, in turn, have driven these countries to seek security of their own asset bases and supplies to hedge against the risk of excessive cost and shortages of material that may blunt their surging economies—further fueling the upward spiral in prices.

While these trends are sobering, the African continent offers opportunities for mining companies to address the challenges they face—if they work with national governments and local communities to manage risks and create economic growth for these constituencies.

Currently, Africa accounts for as little as 6 percent of global mineral production, despite holding an estimated

30 percent of global mineral resources.<sup>1</sup> As shown in Figure 1, Africa’s share of production significantly lags behinds its global resource share across several minerals. Low production figures follow logically from historically low levels of investment in the continent. In 1991, for example, Africa collectively commanded only 5 percent of the world’s exploration and development expenditure.<sup>2</sup>

In the past two decades, however, Africa’s share of global mineral exploration and development budget has climbed steadily, exceeding 13 percent in 2010.<sup>3</sup> Helping to fuel this growth is the presence of countries with sovereign wealth such as Brazil and China, which are making significant investments in some of the less-mature and higher-risk mineral economies across Africa. Rising levels of investment in the exploration and development of Africa’s mineral resources offer a promising signal for Africa’s production potential. The continent is shifting quickly from a prospective region to a pipeline region. And as new projects come online, the surge in investment is expected to be mirrored by growth in Africa’s global production share.

Yet one cannot discuss Africa’s potential without mentioning its considerable risks—both below the ground and above the ground.

Below-the-ground risks are well known by mining companies. Large concentrations of ore, close to the surface near a coastline, are virtually all claimed. Thus, miners increasingly have to deal with deeper, more difficult-to-mine underground resources, landlocked locations, and challenging climate conditions—which increase the risk of execution and the cost required to provide the commodity.

Above-the-ground risks are vexing in their own right, can be quite costly, and often can be as difficult to mitigate as those below the ground. Four such risks are especially prevalent.

*High levels of political instability and corruption.*

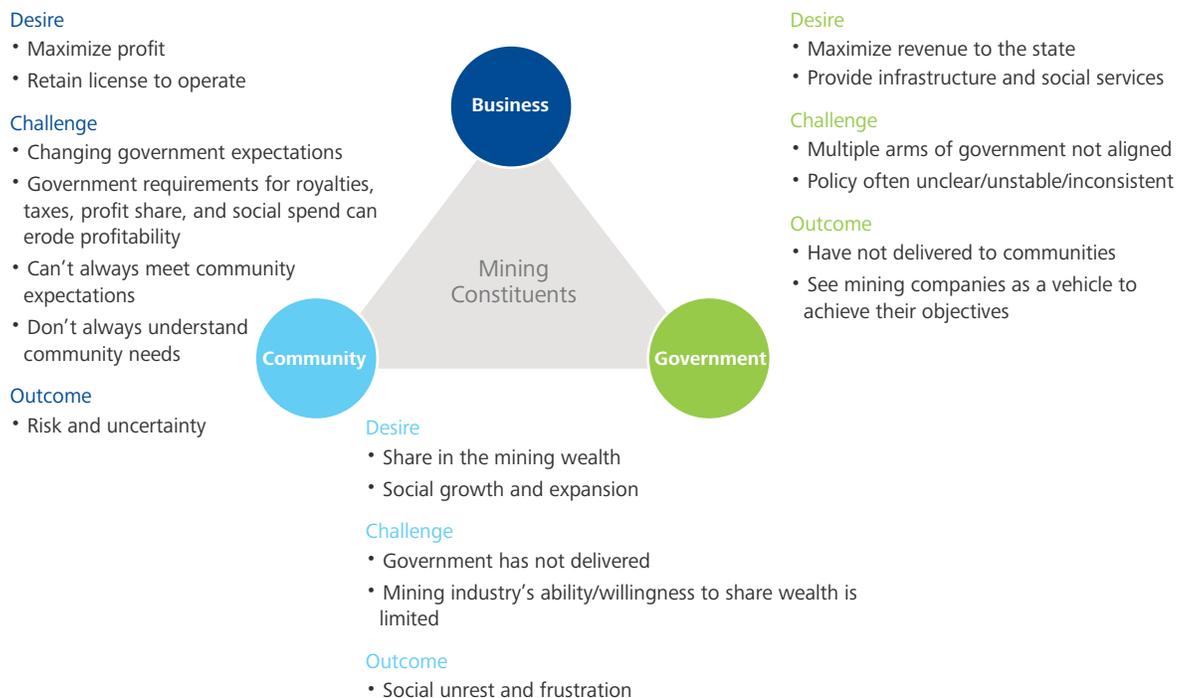
Sub-Saharan African economies often appear at the top of indexes of political risk, and at the bottom of indexes of global transparency. Of the 27 “very high risk” countries featured in the 2009 Political Instability Index, 13 were sub-Saharan African economies. Conversely, only one African country (Mauritius) ranked among the 13 economies categorized as “low risk.”<sup>4</sup> In Transparency International’s 2010 Corruption Perception Index, 30 of 47 sub-Saharan economies were cited for high levels of corruption, while only 16 were described

as having moderate levels of corruption; and none were characterized as having “very clean” economies.<sup>5</sup> Autocracy, tribal fractionalization, and armed conflict appear higher on this continent than any other, and there is regular debate about nationalization in the mining sector.

**Disruptive innovations impacting the public sector will typically originate outside of large government organizations.**

*Opaque regulations.* Though African mining codes have evolved over time, regulations governing mineral exploration and development are often unclear, inconsistent, or unpredictable in several African nations. According to the Fraser Policy Potential Index, which evaluates the attractiveness of a business environment for mining exploration, select sub-Saharan countries such as Botswana are building highly attractive economies for mineral exploration development. Nonetheless, the performance of countries on the continent trails the more-advanced mineral economies in North America and Australia by 10 to 30 percentage points.<sup>6</sup>

**Figure 2: The three primary constituents involved in mining and their agendas**



Furthermore, a government that is willing to change a long-term framework (for example, on how to treat taxation and royalties on natural resource profits) will likely create significant disruption—such as the Mozambican government has done with its announcement that it intends to overhaul the country’s 10-year-old mining code. Zambia’s president, Michael Sata, created a stir in that country when he stated his plans to suspend copper exports “pending the issuance of new guidelines by the government” to improve transparency. This decision ultimately was reversed after two days, but the experience has unnerved some industry participants.<sup>7</sup> Ongoing political debates about the role of central governments in the mining industry only add to the uncertainty.

*Poor enforcement capacity.* Even in instances where mining regulations have been rewritten or advanced, governments often have trouble enforcing them. Countries such as Mali and Madagascar, for example, updated their mining codes to include specific environmental provisions in the late 1990s. However, today, observers note that monitoring and enforcing these standards still falls largely to the private sector.<sup>8</sup> Thus, one can understand why mining companies might be reluctant to invest hundreds of millions of dollars in an operation that requires a stable framework for 30 years if they cannot rely on the government to enforce compliance with the law.

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## One can understand why mining companies might be reluctant to invest in an operation that requires a stable framework for 30 years if they cannot rely on the government to enforce compliance with the law.

*High expectations and social unrest.* Hope is widespread that mineral abundance will translate into prosperity for Africans. The promise of riches remains a distant one, clouded by a history of colonization and what often appears as inequitable distribution of the benefits of the mineral wealth in the post-colonial era. In several African nations, mineral wealth is associated with exacerbated inequality and has not trickled down to alleviate poverty or improve the quality of social service delivery to the average citizen. In many cases, governments lack the capability and the capacity to provide much-needed social services and infrastructure. This history has led to community frustration and social unrest in many areas, and has increased the pressure on governments to translate

mineral wealth into socioeconomic progress. In turn, governments and communities have heightened their demands on mining companies for higher royalties for mineral access, investment in infrastructure, and contributions toward the delivery of social services.

Compounding these above-the-ground risks is the fact the three constituent parties involved in mining have their own, often competing, agendas.

*National governments* primarily seek tangible economic benefits from mineral development, beginning with direct taxation and royalties that can be reinvested in development programs. These demands on mining companies extend to injections of capital in high quality, multi-use infrastructure such as roads and utilities, to beneficiation through value-chain development and other investments for job creation and social requirements, such as education and health care. For example, Zambian President Michael Sata was elected in large part due to his populist message: that mining revenues should be shared more equitably across the country, and foreign firms should be more accountable to the local communities in which they do business. Sata’s 2012 budget includes higher mining taxes to fuel increased social spending.<sup>9</sup>

The primary metric for the government tends to be GDP per capita, although tax revenues, job creation, and human development indicators are also important. National governments’ agendas often are complicated by poor service delivery at a local and regional government level, and the resulting social unrest.

*Local communities* primarily seek to limit the disruption that mineral development will cause to their economic, social, and cultural context, and want access to the new benefits created by large-scale mining. These benefits range from new employment opportunities generated by the mine to a higher quality of infrastructure—electricity, water, sanitation, health, housing, and education—provided to communities. The primary metric for this group tends to be quality of life, broadly measured by income and service access or quality.

*Mining companies* want to enhance levels of production, increase revenues, and manage costs over the life cycle of a mining investment. To enable their long-term presence and profitability, mining companies further seek a license to operate, guaranteeing exclusive and enduring exploration and development rights for a particular resource. The primary metric for this group tends to be output and profitability.

Within this triangle, a number of tensions arise. For example, the countrywide revenues and benefits national governments seek might clash with communities’ desire to see disproportional

tionate socioeconomic benefits locally (in many cases because communities find the government incapable of delivering social benefits to them). Similarly, a government's demands for infrastructure investment might conflict with a mining company's cost efficiency goals. And a local community's desire for economic participation and employment in the mine could limit the productivity and operational efficiency an international company seeks.

The end result of this tangled web is typically dysfunction: Governments are not seeing the beneficiation they desired, and often struggle to stimulate economic development and diversify their economic base. Local communities, let alone national populations, are not seeing the reinvestment of resource windfall toward the social programs they demand. And companies making significant outlays to meet the demands of both governments and local communities see their money being wasted and not having the level of social impact required. Often the companies find themselves in the predicament of having to renegotiate the terms of their mineral exploration rights despite these outlays.

#### **Inclusive Solutions Help Mitigate Above-the-Ground Risks**

While Africa will play an increasing role in the global mineral production pipeline, it is not entirely clear how mineral exploration and development in this continent will unfold. Sovereign firms in Africa's mining sector, such as those from China, often adhere to less onerous accountability, reporting, and transparency standards than major mining counterparts, and typically are less responsible in terms of health and safety compliance or environmental remediation.<sup>10</sup> Does their prevalence signal a "race to the bottom" whereby the competition for resources risks erosion of regulations, enforcement, and accountability in the long-term? Or can major mining companies credibly compete in Africa, and encourage a "race to the top" that ties the profit imperative to economic, social, and environmental objectives of national governments and local communities? The latter question is likely the right one, and the answer can be found in an inclusive approach to development that addresses the needs of governments and communities while enabling the companies to maintain profitable operations.

In an inclusive development approach, an enterprise uses its resources and knowledge to develop or support solutions that improve the community or region in

which it is doing business. Inclusive solutions should be designed to align the objectives and integrate the capabilities of all stakeholder groups, thus increasing the benefits for everyone.

*Market-based solutions* (MBSs), for instance, can help regions make a significant difference in the fight against poverty by delivering social impact in a sustainable way, at scale. MBSs engage poor people as customers, offering them socially beneficial products at prices they can afford, or as business associates—suppliers, agents, or distributors—providing them with improved incomes. Effective MBSs develop local value chains and allow local entrepreneurs to compete as primary suppliers to an organization.

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### **Can major mining companies encourage a “race to the top” that ties the profit imperative to economic, social, and environmental objectives of national governments and local communities?**

To date, MBSs have not been widely used in the mining industry. One example is the Anglo Zimele Fund, which was designed by Anglo American plc to be an independent investment vehicle for enterprise development. The fund was established 20 years ago to develop a network of small businesses to support Anglo's core business, but its autonomous structure allows the fund to pursue opportunities unrelated to Anglo American, including joint initiatives with government, NGOs, and other partners. Since its inception, the Anglo Zimele Fund has invested ZAR318 million (US\$39.8 million) and supported more than 500 businesses.

Another example is an entrepreneurial venture in South Africa that employs more than 50 local mining community residents to convert waste rock from mining operations to aggregate. The venture then sells the aggregate back to the mine. MBSs also have been used by mining companies to foster local participation in the supply of personal protection equipment, transport of both labor and materials, brick making, construction, and laying of pipes and tracks, to name a few.

Effective use of MBSs is far more prevalent in other sectors. Nestlé Pakistan uses an innovative MBS to help assist local milk producers. The company collects milk directly from 160,000 small Pakistani farmers spread across 125,000 square kilometers of land primarily in Punjab. The end-to-end business takes in 500 million liters of milk a year, and in 2008 turned a net profit of US\$20.7 million on revenues of US\$456 million.

In Mexico, an MBS helps small shop-owners at the base of the pyramid gain access to credit via an innovative channel-sharing arrangement between a small national microfinancier (MFI) and a large multinational corporation

*National cluster developments* are inclusive solutions that focus on helping regions and nations understand how to generate efficiency, innovation, and value in high potential but traditionally “low-productivity” clusters within the economy, such as agriculture or forestry. These clusters are often at the core of a region’s economic structure and employment, and thus can be critical vehicles for driving prosperity. National cluster developments can raise competitiveness, foster small and medium enterprises up and down the value chain, and create a bridge between government and the private sector. The mining cluster, together with agriculture and tourism, has a significant role to play in national and regional competitiveness in Africa.

In Vietnam, for instance, a cluster development initiative focused on expanding the existing agricultural value chain in one of the nation’s poorest

regions, Ninh Thuan Province. The plan further identified the potential for rapid gains through building new clusters such as tourism and clean energy. The plan introduced a number of business environment reforms and an innovative institutional framework, which were designed to streamline the investment process and mobilize capital to fund both economic and social development programs.

*Beneficiation strategies* also have been effective in spurring enterprise development in many emerging markets, although to date many beneficiation investments have been in response to government pressure rather than voluntary. Many African governments are becoming increasingly sensitive about their mineral resources leaving the country unbeneficiated, and are seeking to capture the job-creation potential of in-country beneficiation. Legal frameworks and royalty regimes are being constructed to promote in-country smelting, refining, and further downstream beneficiation of their mineral resources. Several countries have earmarked beneficiation in the mining value chain as a specific component of their job-creation strategies.

For instance, Zambia recently banned the export of concentrate copper to increase local beneficiation, while the Democratic Republic of Congo’s Katanga region banned raw ore exports in 2007 to promote beneficiation development. South Africa introduced the Minerals and Petroleum Resources Development Act (MPRDA), which includes policies to promote the local beneficia-

**Figure 3: Framework for developing an effective inclusive solutions strategy**



tion of a mineral if it is economically viable and places strict limitations on what minerals can be beneficiated outside the country. The South African government has earmarked beneficiation as a means to achieve its goal of creating five million new jobs by 2020, and is allocating ZAR22.1 billion (US\$2.8 billion) to fund mining value chain projects in the next five years.<sup>11</sup>

## Infrastructure efforts offer a genuine opportunity to satisfy the needs of mining companies, governments, and the community.

In northwest Zambia, China is pursuing beneficiation in the form of a copper smelter capable of producing 150 kilotons per year. China is constructing the smelter to accompany its mining operations to comply with government requirements that resources are beneficiated in the country to boost employment.

To unlock value in African mining, many companies are expanding beyond their core focus and *investing in infrastructure* as well. Infrastructure efforts—which include the construction of roads and utilities, development of local clinics, and creation of new schools—offer a genuine opportunity to satisfy the needs of mining companies, governments, and communities.

For instance, mining companies in South Africa have effectively collaborated with government and communities to provide much needed water infrastructure. In this arrangement, government has provided bulk water supply, while the mining companies have provided local reticulation using local community-based contractors.

Also in South Africa, one mining company recognized the need for a local medical facility (the closest hospital was 14 kilometers away) by funding the construction, staffing, and supplies for a new community clinic. Other companies have established several private vocational training programs to offer a highly standardized and limited set of typically service-industry qualifications to low-income job seekers (with the offer sometimes being complemented by job placement services).

In 2009, China invested more than US\$400 million in Zambia's mining industry while, simultaneously, investors announced plans to build the North West Rail (which is planned initially to span 254 kilometers and,

in the next phase, extend to and connect with Angola's Benguela line). Brazil plans to spend US\$300 million in developing the infrastructure in Mozambique to facilitate coal transportation.

As the preceding examples illustrate, inclusive solutions are a vital element of what a company brings to the countries and communities in which it operates. Creating the desired solution for the community, and managing the solution's implementation and operation effectively, can benefit all stakeholders involved. But it is important to emphasize that inclusive solutions do not mean doing ad hoc or isolated projects (such as building a hospital or school). Inclusive solutions actually are part of a broader, more comprehensive strategy to deliver value to the local community. Furthermore, effective inclusive solutions should not add complexity to a mining company's organization. Rather, they should enable the delivery of something of value to the community, often by engaging qualified third-party partners that can deliver the solutions on behalf of the company.

### A Framework for Developing Effective Inclusive Solutions

As they consider how to incorporate inclusive solutions into their operations, mining companies should understand that such efforts are not simply a matter of compliance. Rather, they represent a genuine move toward a new "social license to operate" model. Companies effective in gaining access to Africa's rich mineral deposits will be those that foster deep ties with specific communities, find ways to integrate these communities into their supply chains, and act as a proactive partner to government (for instance, using infrastructure built for mining exploitation as a means to drive economic development in other sectors).

## Inclusive solutions are not simply a matter of compliance. Rather, they represent a genuine move toward a new "social license to operate" model.

In short, mining companies should adopt a fundamentally new approach to developing inclusive solutions that addresses the agendas of governments, communities, and the companies themselves, and do so not just today or for a year or two, but for the long-term. This approach, illustrated by the framework in Figure 3, encompasses three basic dimensions: determine the company's specific goals for its inclusive solutions, identify the focus of the solutions, and define how best to enact the strategy.

*Determine specific goals and aspirations.* At the outset, companies should determine what they ultimately want their solutions to achieve. For most companies, three important high-level goals should be sustainability (the solutions should last), social impact (they should positively affect as many stakeholders as possible and be feasible), and economic value (they should result in economic value for the company itself). But companies also should set more specific goals that reflect the uniqueness of their own operations and communities in which they operate or plan to operate. For example, a company may decide it wants to focus on creating jobs and developing local enterprises, providing better access to basic services, or delivering education and skills training that can enhance the employability of local residents.

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## Incorporating both internal and external perspectives in goal setting can help companies craft solutions that ultimately are embraced by constituents.

When deciding on the goals to be achieved, companies should consider both internal factors (shareholder expectations, management and employee views, and current internal policies) as well as external factors (the social context of the solutions, leading practice examples, and any relevant regulations). Incorporating both perspectives in goal setting can help companies craft solutions that ultimately are embraced by constituents.

*Identify the focus of the solutions.* With its goals articulated, a company should decide which types of solutions to pursue and where to pursue them. Doing so requires making choices that involve difficult trade-offs in five areas.

- Deep focus versus wide focus—Should the company concentrate its solutions in two or three focus areas to enhance impact, or disperse its solutions to multiple areas of focus to affect the greatest number of people? Which specific issue areas should it target?
- Immediate impact versus long-term impact—Should the solutions provide tangible results in the short term to help people in immediate need, or catalyze long-term social change by effecting changes in the fundamentals of a society to make an enduring difference in the lives of people for generations?
- Within the company's value chain versus outside of it—Should the solutions be directly or indirectly linked to the company's value chain (for example, providing scholarships for engineering students who later could become employees, or developing local entrepreneurs as suppliers), or be unrelated to the company's value chain?
- Operation-customized versus group-standardized—Should the solutions be tailored to specific needs in a particular community, or be standardized across multiple communities?
- Mine-only communities versus other communities—Should the solutions focus only on communities immediately surrounding the mining operation, or be spread farther afield? To what extent does the company engage with national and regional government on cluster development strategies?

Such choices can be very difficult but critical. The route taken largely will determine the effectiveness of the inclusive solutions a company ultimately implements.

*Define how to enact the strategy.* The third step in the framework is determining how a company will bring its solutions to life and increase their impact. This step includes identifying the desired investment model,

engaging all affected stakeholders, deciding how to provide the solutions, and measuring impact.

Identifying the desired investment model is an important first step in defining the solution, as an insufficiently funded solution will fail to live up to its potential. Some of the specific investment-related issues a company should address are whether it will invest for return versus pursuing loans or grants; whether its investment strategies are localized or based on a pooling of funds across multiple operations; how best to leverage co-investment from government, other businesses, and beneficiary communities; and whether the company funds solutions from annual operational budgets or through an endowment.

## Inclusive solutions are a critical component of business effectiveness and no longer can be marginalized and delegated to junior human resources practitioners.

Effective stakeholder engagement is arguably a critical factor in the effectiveness of an inclusive solution. In fact, examples abound of situations in which companies do not fully involve stakeholders in solution definition—and pay the price. For example, despite significant social spend, mining companies in the Eastern Platinum Limb in South Africa frequently are under siege from frustrated communities. Not only do communities have unrealistic expectations and fail to give the mines credit for the good work they have done, but in many cases projects and initiatives are misdirected due to companies' poor understanding of the actual needs of the community. Projects that do not have significant community ownership and buy-in are likely to fail.

Companies also should be deliberate in how they mobilize to deliver on their promises. Inclusive solutions are a critical component of business effectiveness and no longer can be marginalized and delegated to junior human resources practitioners. Companies should consider the skills and competencies required at each

level in the organization required for implementing the solutions, how the solutions will be structured, which decisions will be made where and by whom, and what enabling systems and processes are required. Fortunately, companies do not have to reinvent the wheel. They can learn from the mistakes other organizations already have made, as well as benefit from the experience of myriad potential partner organizations that are skilled in delivering enterprise development, education, or health solutions. And they should consider developing appropriate partnerships with other mining companies operating in the same communities—as well as local, regional, and national governments—to enhance solution design and delivery.

Finally, just like any corporate initiative, inclusive solutions should be measured and evaluated. Typically, companies have not measured inclusive solutions at all, beyond a simple reporting of funds spent. Companies should implement and use the appropriate key performance indicators (KPIs) that enable them to gauge the effectiveness and impact of their programs, as well as identify on an ongoing basis ways to improve the solutions. Employee performance measures are especially important, as they will help ensure that the company's employees are delivering on the solutions' objectives and that people are held accountable for the decisions and outcomes they own. These measures should be paired with incentives and performance-based rewards to ensure continuous drive for improvement and best practice. Project management KPIs also are vital, to ensure the development and implementation of solutions are undertaken with the same rigor and conscientiousness as any other mining project.

The outcome of this approach is a new strategy a mining company can take forward as a critical element of its efforts to do business in Africa. This framework is deceptively simple, but the challenges it addresses are not. Creating inclusive solutions that result in meaningful impact for all stakeholders involves numerous potential pitfalls along the way. It is important to build a strong business case for solutions at the very outset. If the team responsible for creating the solutions can clearly demonstrate the tangible benefit the company, government, and communities will gain—and how

that benefit will be measured—it will likely have a greater chance of accessing the corporate resources and support vital to the solutions’ effectiveness.

### The Imperative for Mining Companies

As mining companies seek new sources of supply to meet burgeoning resource demand, Africa is taking center stage. Yet as chronicled above and in the media, doing business in Africa can be a risky proposition, especially for mining companies that need predictability and stability to thrive. The above-the-ground risks one can encounter on the continent are manifold and significant, and mitigating them requires inclusive solutions that balance the needs and interests of governments involved, communities affected, and the mining companies themselves.

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## Mitigating above-the-ground risks requires inclusive solutions that balance the needs and interests of governments involved, communities affected, and the mining companies themselves.

Indeed, there is a significant role, and an even more significant imperative, for mining companies to champion inclusive solutions in the next decade.

The *suitability* of mining companies to take on this role is clear, as the trilateral balance in emerging economies tends to occur as two bilateral conversations. The first of these is between the company and national government, while the second is between the company and the local community. Mining companies are thus in a rare position to identify and implement opportunities for shared value among all three constituents.

The *imperative* for mining companies to take on this responsibility is also clear. Given the industry’s long project life cycles and the turbulent political and economic climates of many nations on the continent, the above-the-ground risk assumed by mining companies in Africa is significant. This risk is unlikely to subside, and may even increase as companies sink resources into the ground and lose bargaining power over the course of their investment. Ultimately, delivery on the objectives of both national government and local communities provides the most sustainable means for a company’s continued political and social license to operate in Africa.

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