

AIR WAR COLLEGE

AIR UNIVERSITY

IMPLICATIONS OF COMPETITION

FOR

STRATEGIC MINERALS IN AFRICA

by

John S. Cranston, CDR, USN

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

15 February 2011

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Biography

Commander John Cranston is a student at Air War College. He commissioned through NROTC at The Citadel, where he graduated with a Bachelor of Arts in Political Science. He is a Foreign Area Officer (Asia/Pacific region). His previous tours include sea tours in USS INGRAHAM (FFG 61), USS CHAFEE (DDG 90), USS CURTS (FFG 38), USNS BIG HORN (T-AO 198), and USS BOONE (FFG 28). His staff tours include the CNO Staff, N81 Assessment Division, N16 IT Management, and an exchange tour as Assistant Operations Officer to the German Navy Mine Countermeasures Flotilla.



Introduction

Increased commodities demand symptomatic to globalization offer the United States a strategic opportunity to broaden and deepen its strategic partnership with Africa to the benefit of both sides. Specifically, increasing demand for a host of strategic minerals brings the promise and threat of greater exploitation of natural resources to Africa. This paper will explore the strategic implications of that trend to the U.S.-Africa partnership by focusing on strategic, non-energy minerals.

Demand for base minerals has increased substantially in the past decade. Despite the recent global recession, base metal prices and global trade volumes once again rival boom levels seen as recently as early 2008. Increased demand in transitional economies, such as China and India, is seen as the largest contributing factor to increased prices.¹ For example, following a precipitous decline, the world prices for scrap steel and copper, commodities critical for construction, electrical infrastructure, and defense applications, have rebounded to near peak levels due to continued strong infrastructure development in the world's two most populous nations.

Iron ore, copper, and several additional minerals and metals are vital to the continued functioning of the United States defense industrial base. Among these additional minerals are Aluminum, Cobalt, Manganese, Molybdenum, and Rare Earth Elements (REEs). Domestic sources for many of these and other strategic minerals are either not available or economically viable, even at currently inflated prices. Even if reserves do exist within the U.S. or strategic allies, the capability to quickly develop such sources may not be present. A further factor in the supply chain for strategic minerals is the concern that several existing sources, many of which have been relied upon for decades, are diminishing in their production volumes and ore grades.

Illustrative of this phenomenon are forecasts for production at the mammoth Escondida copper mine in Chile. Far and away the largest copper mine in the world, Escondida singlehandedly supplies over six percent over world copper ore production. Forecasts indicate production at Escondida will drop by ten to twenty percent in the next two to three years.²

Thus, decreasing supply in traditional mineral producing areas and increasing global demand as large transitional economies seek economic development and growth, are combining to create conditions under which the continued availability of critical defense materials is no longer assured. Into this equation enters Africa. In addition to having a large share of global production of certain strategically important precious minerals, such as gold and platinum group minerals (PGMs), the continent is widely acknowledged as having vast reserves of other base and industrial minerals, only a fraction of which have been developed.³

Strategic Topography

In addition to being a famous leading producer of precious metals and diamonds, Africa is a key supplier of several strategic minerals. The continent provides over half the world's supply of palladium and cobalt, over forty percent of chromite and manganese, over ten percent of uranium, petroleum, bauxite and alumina, and significant quantities of copper, nickel, coal, and iron ore.⁴ Furthermore, according to U.S. Senate hearings on the subject, the per capita value of proven mineral reserves in Africa is roughly one-fifth the average of OECD countries.⁵ As the likelihood that the continent of Africa is somehow geologically deprived is rather low given what is known about Africa's mineral deposits, the much more probable circumstance is that current mining efforts in Africa constitute but a small fraction of the continent's mineral worth.

Market Topography

Until recently, Africa was the target of comparably few mineral exploration and development projects for base and industrial minerals. This was partially due to industry wide effects of market forces. Low market prices throughout the nineties and early part of the most recent decade led to industry wide underinvestment in minerals extraction. Africa has reaped benefits from an upswing in mining capital investment within the last six years or so, but, even within the context of macro-industry trends, Africa still receives less investment than its potential would otherwise suggest.

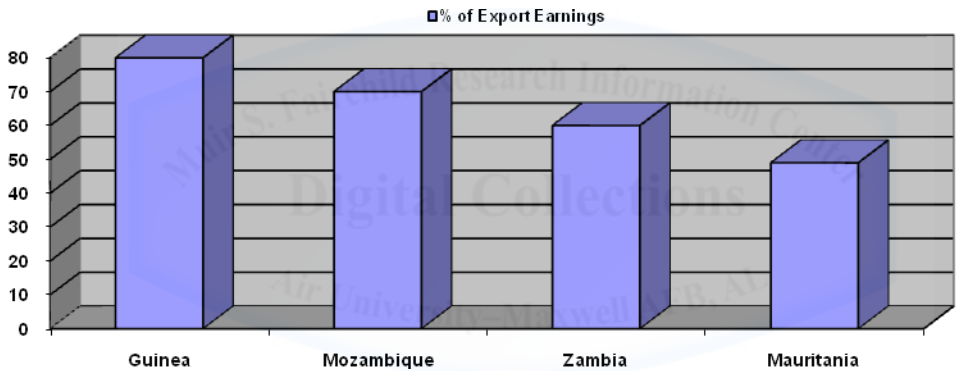
This trend may already be changing, and is likely to continue to swing upward as increasing demand signals from industrializing nations continue to grow and developed world economies recover from recession. Within the last few years, numerous investment projects in Africa for new, upgraded, or reconstituted extraction of copper, aluminum, rare earths, manganese and others have been implemented.⁶ The result is that the global share of production of several key strategic minerals from Africa may be on a path to significantly increase in the coming decade.

A related positive phenomenon is the strong surge in development of refining capacity in African producing nations. For example, in the year 2000, exports of refined metal products formed less than five percent of the Democratic Republic of the Congo's total mineral exports. In 2011, refined products share of total mineral exports is forecast to exceed thirty percent.⁷ Perhaps the clearest example of this development has been the wholesale shift in Zambia away from copper ore exports to those of refined copper concentrate and copper anodes. As suppliers

shift refining capacity to Africa from other locations, Africa takes part in a larger portion of the value added to products, which has the potential to positively impact African patterns of growth.

Economic and Cultural Considerations

Quite often, the experience of western businesses and governments in Africa has been characterized by frustration and disappointment on both sides. Past experiences and colonial legacies have created an environment in which distrust is often a pre-existing condition at both policy making and the popular levels. With some historical legitimacy, resource extraction industries are particularly distrusted by African elites and popular opinion.



(Figure 1)⁸

Despite the distrust, several African countries remain dependent on minerals export for a large part of their GDP. For example, Guinea, Zambia, Mozambique, and Mauritania, derive over fifty percent of exports earnings from non-fuel, non-precious minerals export (see Figure 1). This dependence on single commodity exports not only makes the economies of those countries extremely vulnerable to changes in price in the global market, but may also encourage rent seeking and stunt development of other economic sectors. Additionally, waves of Foreign Direct Investment (FDI) may result in “Dutch Disease”, whereby the local currency appreciates to an unwanted extent, making local industries less competitive in global export markets.⁹ Thus, once

dependent on primary product exports, the host nation remains dependent, a dependence which may be encouraged or exploited by foreign firms.

From the perspective of an outside firm considering joint venture or direct investment in Africa, the commonly applied list of existent or potential problems is daunting. Infrastructure may be inadequate to cope with communication, energy, and transportation demands; local banking and financial structures may be inadequate; laws may be unevenly or unfairly applied; contract enforcement may not be assured; political stability may be threatened; insurgencies or bandits may pose a physical threat to equipment or workers; local workers may not possess suitable skills or education for employment; and regime change may present risk of nationalization of the company's assets. The actual level of any of the above listed risks in a given country may not be high at any given time, but the perception of their presence may cause firms to under-invest, or to negotiate for exceptionally concessionary terms from host governments, which may become a source of distrust and resentment.

One rising threat at the moment is a perception of increased risk of nationalization or expropriation of foreign company assets by the host government. Expropriatory actions in Zimbabwe and the Democratic Republic of the Congo (DRC) are seen as risks to investment by foreign firms.¹⁰ In South Africa, the stated objective of nationalization of foreign assets by the junior wing of the African National Congress (ANC) has the same effect.¹¹

Diplomatic and Military Considerations

As an extension of distrusting western business agendas in Africa, the United States government and military is also commonly suspected of harboring ill designs on the continent. Overt linkage of U.S. backed mineral interests with U.S. government initiatives in Africa risks

triggering suspicion that American actions are motivated not by respect for, and a desire to partner with, African interlocutors, but rather by a sinister desire to drain Africa of its natural resources. Regardless of whether such suspicions are verifiable, the perception of malign motivations may complicate government to government initiatives. For example, proposals for moving the headquarters of AFRICOM, likely the least military of all the COCOMs, to the African continent are often met with distrust by partner nations and are seen by some as confirmation of America's desire to dominate Africa.¹² From a military perspective, the lack of U.S. bases, absence of close military allies with significant military capacity, and paucity of sizeable logistics hubs, could combine with local intransigence to narrow U.S. basing and logistics options in the event instability should require U.S. led Non-combatant Evacuation Operations (NEO) or military presence to ensure the continued operation of strategically valuable resource extraction operations.

Mineral Case Study – Copper

Copper was chosen for a case study for several reasons. First, it is of high importance for defense and critical infrastructure. Second, it is in high demand not only in the United States, but also in several competitor countries as well. Third, although Africa's current share of world exports is relatively small, the last few years have seen extensive effort in developing and exploiting the continent's significant copper reserves.

One of the oldest traded metal commodities, copper is a necessary component in construction, communications, electrical power generation and transmission, and dozens of other uses. The United States uses approximately two million metric tons of copper per year.¹³ Over one hundred thousand metric tons, or about five percent of national demand, is by the

Department of Defense (DoD).¹⁴ Copper is also, after steel and aluminum, the third most heavily used mineral by DoD.¹⁵ In addition to being critical to electrical systems, new uses for copper continue to be found, including copper chips for computers and semi-conductors. Therefore, it is extremely unlikely copper will cease to be an important strategic mineral in the near to mid-term.

Demand Factors

The United States is not the only country with a strong interest in copper, however. Global demand is closely tied to economies in transition, particularly in Asia. Demand in China and India, has soared as those two large economies have poured trillions of dollars into infrastructure development in the last decade. China, which already accounts for over seven million metric



(Figure 2)¹⁶

tons of imports, nearly forty percent of global copper demand, and India are expected to continue driving future demand.¹⁷ Forecast increases in demand in 2011 are predicted at 14% and 15% respectively. In the years 2000-2009, world demand for refined copper has risen from 15.2mMT to almost 18.2mMT per year.¹⁸ Demand for copper fell dramatically in late 2008 and early 2009, during the global financial crisis, but has since recovered. The strong increase in demand has had a strong effect on pricing, as seen in Figure 2.

Global demand is expected to continue to rise in 2011, by 4.49% to over 19.7mMT, and beyond as transition economies develop modern infrastructure and produce ever more sophisticated products.¹⁹ Despite strong demand growth, overall copper trade growth will likely be constrained in the near future by supply side restrictions.²⁰

Supply Factors

Global copper production has also increased dramatically, though not enough to keep pace with demand. Copper ore production in 2009 topped 15.4 million metric tons, well short of global refining capacity.²¹ Also, concerns over declining ore grades in several key producing areas, such as Chile and Indonesia exist. Although industry leaders appear to be making substantial capital investments to increase ore production in traditional areas of supply, diminishing returns are also driving them to make substantial investments in riskier areas, such as Afghanistan, Mongolia, and Africa.

Copper in Africa

In Africa, Zambia and the Democratic Republic of the Congo (DRC) are home to the Central African Copperbelt, a vast metallogenic region containing over ten percent of the world's

proven copper reserves as well as substantial quantities of several other minerals. As such, they are Africa's primary copper producing nations. Additional minor production is located in South Africa, Namibia, Tanzania, and Morocco. Although Africa only accounts for slightly less than ten percent of global copper production, significant investments have been made, or are underway, which have the potential to dramatically increase Africa's share of the global copper trade by 2020. For example, in September, 2010, Freeport-McMoran announced plans to expand production at its Tenke-Fungurume mine in the DRC to nearly double its current capacity of 115,000MT per year. A few months earlier, Chinese state-owned mining giant, China Nonferrous Metal Mining Company (CNMC) stated it would invest \$600 million in Zambia to increase its copper production in the country to 500,000MT per year by 2014.²² In the last five years, copper ore output on the continent has more than doubled, from 670,000MT in 2005 to 750,000MT in the first six months of 2010.²³

However, expansion is not always predictable or free of obstacles. For example, Freeport-McMoran was forced to negotiate a reduced stake in Tenke-Fungurume at the behest of the DRC government. Freeport-McMoran and its junior partner Lundin sacrificed a 2.5% stake in the project to state-owned Gecamines as part of a contract re-negotiation. In September, 2010, the DRC government banned mining in the Congo's eastern provinces. Furthermore, rebel activity complicates mining operations in those areas. Also, production at Canadian miner First Quantum's Frontier copper mine in the DRC was halted by the DRC government pending legal action by a DRC state-owned mining company Sodimico. Furthermore, DRC government review of an exploration contract for development of the Kolwezi copper deposit by Canadian owned Congo Mineral Developments, a subsidiary of First Quantum, resulted in cancellation of the contract and uncompensated awarding of the Kolwezi mineral rights to state owned

Gecamines. A local court then ruled, without supporting evidence, that Congo Mineral Developments could not exist by law within the DRC and awarded \$12 billion in damages to Gecamines and CAMI, the DRC state mining registry.²⁴ Needless to say, uncertainty in the legal environment complicates investment decisions, especially in an industry in which capital costs can easily be measured in billions of dollars and in which large, immobile hard assets are at risk.

In terms of transportation infrastructure, copper is a second-tier bulk commodity, at best, far behind the dry bulk commodities such as iron ore, coal, and grain, which define the shipping market. Global copper trade in 2009 was less than 20mMT, not including trade in scrap copper products, compared to over 800mMT of iron ore, 800mMT of coal, and 300mMT of grain.²⁵ Even in the largest copper exporting African port, Durban, South Africa, copper exports comprise but a small fraction of total bulk exports.²⁶ Additionally, vessels dedicated to carrying copper and other minor bulks are a fraction of the size of vessels in the iron ore, coal, grain, or bauxite trades.²⁷ Therefore, increased copper production in Africa is unlikely to encounter export impediments in shipping due to poor infrastructure.

Road and railway impediments are a different story (see Figure 3). As southern Congo's only rail link to a seaport was cut decades ago, during the Angolan civil war, exports from the Congo must be trucked overland to Zambia.²⁸ In addition to being appallingly inefficient, this long and often tenuous route, places the cargo at additional risk due to disorder. This was made tellingly apparent in August, 2010, when rioters closed roads in the Congo's Tenke region, blocking exports and looting trucks.²⁹ From Zambia, exports travel via rail through Zimbabwe, and Mozambique to Maputo or South Africa to Durban. Reliance on a single transportation node, especially one which passes through Robert Mugabe's Zimbabwe, cannot be seen as strategically reliable. Perhaps for that reason, both American company Freeport-McMoran the

Congo and Chinese miners in Zambia have stated separately stated intentions to rebuild the Benguela railroad to Luanda in Angola.³⁰ No work has begun on the project, however, nor has a timeline been established.



Source: Bullock 2009.

(Figure 3)³¹

In summary, copper is very representative of strategic minerals in Africa as a whole. With large proven reserves of a strategically vital resource and considerable scope for further exploration, the continent shows considerable economic potential, potential increasing likely to be turned into reality as diminishing returns in other areas increase Africa's relative attractiveness. However, poor infrastructure, moving goalposts, popular unrest, and poor governance present challenges to further growth.

Mineral Case Study - Rare Earth Elements (REE)

The second case study presented regards Rare Earth Elements. In contrast to the already well-developed copper mining industry in Africa, this case study is presented to specifically address Africa's potential in relation to a relatively new mineral commodity. According to the United States Geological Survey (USGS), Rare Earth Elements are, "fifteen elements with atomic numbers 57 through 71, from lanthanum to lutetium ("lanthanides"), plus yttrium (39), which is chemically similar to the lanthanide elements and thus typically included with the rare earth elements".³² Rare Earth Elements are used in relatively small quantities, with total global production at roughly 126,000 metric tons, less than one percent of that of total global copper production.³³ Nevertheless, the applications for Rare Earth Elements are diverse and growing. Currently, they are used in: automotive catalytic converters, oil refining, armaments, permanent magnets, superalloys, flat-panel displays, electronic thermometers, fiber optics, lasers, superconductors, and x-ray-intensifying screens, to name a few.³⁴ Additional uses are being found for Rare Earth Elements, to include green energy applications such as rechargeable batteries for electric and hybrid vehicles and permanent magnets in wind turbines.³⁵

Demand Factors

Rare Earth elements are an example of how technology can bring previously minor materials into great demand. Global demand for rare earths has doubled in the last fifteen years, with forecasts for an increased demand trend line due to a wide range of high-technology, defense, and green energy applications.³⁶ Although prices steadily declined after Chinese mines entered the markets in the mid-1990s to a low of \$3,890 per ton in 2006, they reversed as

increasing demand caught up with supply.³⁷ Prices peaked at \$13,600 per ton in 2008 before the global financial crisis and are showing signs they may reach new highs in 2011.³⁸ Solid forecasts regarding demand growth for Rare Earth Elements usage are hard to come by, but the increasing number of uses for permanent magnets in electric cars and wind turbines could indicate a sharper rise in demand than the already strong demand increase seen in the last decade.

Supply Factors

For much of the twentieth century, the United States was a key Rare Earth elements producer. From 1966 to 1985, the United States produced more than half the global supply of Total Rare Earth Oxide (TREO), and the country remained a net Rare Earth Elements exporter until as recently as 1995.³⁹ For the last decade, China has dominated global Rare Earth Elements production, and currently generates approximately ninety five percent of Rare Earths mined per year.⁴⁰ Furthermore, as Rare Earth Element production is concentrated in a handful of countries, most notably China, the risk of supply disruption is high. As an ICAF study put it in 2008, “The REEs encompass all aspects of a critical mineral, low substitutability and high risk for supply interruption, coupled with domestic sources that are currently unavailable due to environmental constraints.”⁴¹

China’s dominance of the Rare Earth Elements industry is a reflection of lower production costs rather than due to a significant qualitative advantage in Rare Earth Elements ore concentration or ease of extraction.⁴² As a share of Total Rare Earth Oxide (TREO) reserves, China only possesses thirty six percent of TREO assets.⁴³ The former Soviet Union, the United States, Australia, and others also boast significant quantities of Rare Earth Elements. China’s

ability to dominate the market on the basis of lower production costs holds both hope and danger for Rare Earth Elements mining in Africa.

Rare Earth Elements in Africa

Although Africa possesses similar advantages to China in terms of labor cost, it also carries a reputation for lax environmental standards, much like China. Given the environmental impacts of hardrock mining, especially of ores which contain a relatively low quantity of metal such as Rare Earth Elements, the environmental costs of Rare Earth Elements development in Africa may be high.

Deposit	Gross Tonnage (metric tons)	Grade (percent TREO)	Contained TREO (metric tons)	Source
Steenkampskraal, South Africa	249,500	11.80	29,500	Great Western Minerals Group Ltd. (2009).
Kangankunde Hill, Malawi	2,500,000	4.24	107,000	Lynas Corporation Ltd. (2007).
Kasagwe, Burundi	67,000	1.50	1,000	Jackson and Christiansen (1993).
Mrima Hill, Kenya	6,000,000	16.2	972,000	Pell (1996).
Zandkopsdrift, South Africa	31,500,000	3.60	1,130,000	Frontier Minerals (2009).

(Figure 4)⁴⁴

Unfortunately, even if development should be desired, identified Rare Earth Elements deposits in Africa (see Figure 4) are relatively minor, accounting for less than two percent of global reserves. The ones that have been identified are poorly surveyed and are largely undeveloped. Only Steenkampskraal and Kangankunde Hill have undergone any form of

rigorous surveying and only the Great Western Minerals Group thorium mine at Steekampskraal is targeted for further development at this time.

In contrast, twenty one percent of the world's REE reserves are in the U.S. and Australia, with significant investment projects in progress in each country.⁴⁵ Canada also has large reserves. Therefore, it is unlikely Africa will play a significant role in the global competition for Rare Earth Elements in the near to mid-term, but, as with many other resources, discoveries of new deposits could change the strategic picture.

Other Strategic Minerals

Although beyond the scope of this paper, Africa also produces significant quantities of several other strategic minerals, including bauxite and alumina, cobalt, manganese and others.

Strategic Implications

The strategic implications of tightening supply, increasing demand, and shifting patterns of production present the industrialized and industrializing world with challenges and opportunities. Firms from Canada, the United States, China, India, and others have all dramatically increased investment in extractive industries on the African continent within the last ten years. The consequences for the U.S. Department of Defense range from the strategic to the operational.

At the high end of the scale of conflict and strategy, increased reliance by competitor nations on resources derived from a long supply chain through underdeveloped nations presents the U.S., either through military or diplomatic means with the potential capability of disrupting

those supply chains. Increased dependence on imported materials, not just from Africa, may pose a pressure point for newly industrializing powers. Obviously a serious threat to the economic well-being of importing nations, the threat of supply disruption should be reserved for cases of absolute necessity as it could be seen as an existential threat and would likely invite retaliatory action.

Related to the power to restrict the transportation of goods is the considerably less violent, but still contentious, struggle to control the factors of production. As Western and BRIC firms scramble for mineral exploration and development rights in Africa, the risk of a lack of business foresight or agility resulting in a given country losing access to minerals is the stuff of nightmares for national security and industrial planners in capitals around the world. At this point there is little evidence that any one power has succeeded in coming anywhere close to capturing a destabilizing amount of control over the production of any single mineral commodity through its actions in Africa, but that does not preclude the possibility of “cornering the market” being adopted as a means of national policy at some point in the future.

A more likely possibility is that judicious use of investment and aid will result in the accumulation of influence and goodwill. This influence may find application through diplomatic support in the fora of international institutions, opening of markets to trade, increased arms sales, and other such measures.

In competition for power and influence, the participants face certain risks as well. The possibility of popular backlash against the investing nation has sufficient precedent that it should not be lightly discounted. Legal action against the Chinese Nonferrous Minerals Corporation (CNMC) in Zambia and anti-Chinese riots in parts of the copper belt and Sudan not only increase the costs of business, create risk of supply chain disruption, and may form a source of

international embarrassment, but are also evidence that foreign investment in underdeveloped economies may cause social dislocation and cultural friction, regardless of the nationality of the investor.⁴⁶

Recommendations

This paper draws a distinction between import reliance and import dependence. In general terms, import reliance on strategic minerals is not intrinsically detrimental to the strategic interests of the United States. In fact, importing strategic materials has the positive effects of preserving strategic reserves within the United States, avoiding environmental degradation common to hard rock mining, and providing trade revenue and development opportunities for partner nations. However, import reliance must be carefully managed to avoid dependence, which places the United States at risk of supply disruptions. Given Africa's position in global patterns of production for several key strategic minerals, U.S.-Africa partnerships offer "win-win" opportunities in this policy area. In order to fully effect a U.S.-Africa partnership in strategic minerals sourcing, the following policy recommendations are proposed:

Reconstitute the National Defense Stockpile. Once intended to provide a three year supply of strategic materials to protect critical industry in case of supply disruptions, the National Defense Stockpile was dramatically reduced in the wake of the Cold War as part of the "peace dividend".⁴⁷ As presently constituted the, "design, structure and operation of the National Defense Stockpile render it ineffective in responding to modern needs and threats."⁴⁸ Unpalatable in an era of increasing fiscal constraints, a modest investment in reconstituting a tailored National Defense Stockpile would dramatically reduce United States vulnerability to

supply disruptions. Although reconstituting the National Defense Stockpile is not specifically aimed at improving partnership with African nations, it could be combined with other recommendations in this section to achieve synergistic effects. The lead agency for implementation of this recommendation would be the Defense Logistics Agency (DLA).

Incentivize Diversification. U.S. government partnership with industry should be fostered. One goal of such partnership should be the use of government incentives to encourage investment in production projects which will diversify sourcing of strategic minerals with government. As a region well-poised for increases in mineral extraction investment, Africa would benefit from any government action which increases U.S. investment in mineral extraction projects. Lead agency for this recommendation would be the Department of Commerce.

Implement Bilateral Agreements with African Partners. Expansion of bilateral negotiations with African partners to include linkages favoring direct investment in mineral extractive industries or including clauses liberalizing investment in such industries are the most direct method of ensuring the United States and Africa benefit from growth in strategic minerals mining. Lead agency for this recommendation would be the United States Trade Representative (USTR).

Leverage U.S. Trade Policy and the United States Trade Representative. Legislation to incentivize sourcing of strategic materials from countries with which the United States has Free Trade Agreements (FTAs) has the potential to contribute to the growth of a virtuous circle as ratification of FTAs in Congress is sometimes linked with issues such as the rule of Law, transparency, and good governance. Lead agency for the recommendation would be the Department of Commerce.⁴⁹

Conclusion

The strategic environment with regard to industrial resources will continue to evolve throughout the foreseeable future. With demand signals from major developing powers at their highest levels in history, globalization spreading advanced infrastructure and trade to ever more parts of the globe, and the industrialized world emerging from the “Great Recession”, it is likely demand for raw resources will continue to strengthen through the coming decades. Additionally, technology driven changes in mineral demand complicate strategic planning.

Higher demand, coupled with diminishing returns from traditional sources of supply, and changes in demand patterns combine to generate the very real possibility of competition for strategic minerals becoming a source of conflict. As competition for access to economical sources of base minerals intensifies, the strategic calculus of foreign firms and governments regarding Africa may change.

From being an underdeveloped periphery in the global economy, Africa’s mineral wealth may increase the continent’s profile in economic and political matters. Whether or not Africa will benefit from resurgence in attention largely depends on how the United States and its African partners manage the new environment. From the optimistic viewpoint, mineral development contracts should provide much needed revenue and spur economic growth. Increased growth brings clout, prosperity, and increased influence in international institutions. Properly managed, the proceeds of high mineral prices could become the starter engine for sustained growth in Africa.

African history, however, is witness to a different outcome. The history of oil, gold, ivory and other commodities bears testament to the difference between expectations of wealth from natural resources and actual experience. This suggests a more pessimistic future for Africa.

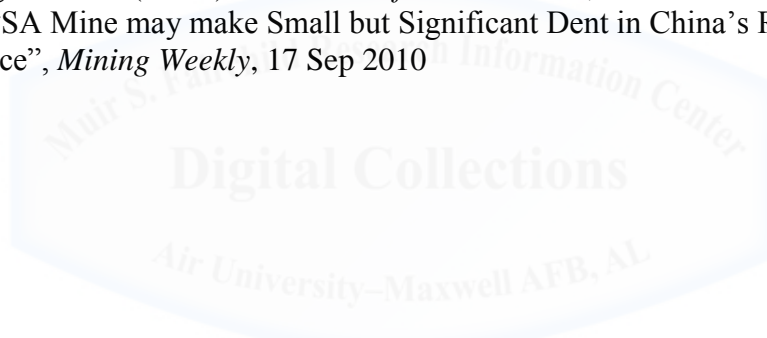
Under this scenario, foreign firms and governments will exploit weak government structures, disparities in influence and power, and endemic corruption in host governments to impose uneven terms of trade upon African nations. In this model, the very factors which allow and encourage exploitation incentivize powerful nations to keep Africa marginalized and impoverished.

Therefore, while shifting patterns of resource production present tremendous opportunities for the development of Africa in a virtuous partnership with the United States, both partners must guard against the risks presented by the so-called “curse of natural resources.” The risks of such development going astray and creating a backlash against African governments and foreign investor nations are not inconsequential. The common perception of a long history of foreign nations having already exploited Africa for its mineral wealth means western firms and governments must be prepared to answer criticism in advance and take additional measures to support transparency as they move forward. Expectation management and a firm commitment to partnership on both sides will likely prove crucial to the United States achieving its twin goals of maintaining reliable access to strategic minerals and fostering sustainable, balanced development and good relations with its African partners.

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