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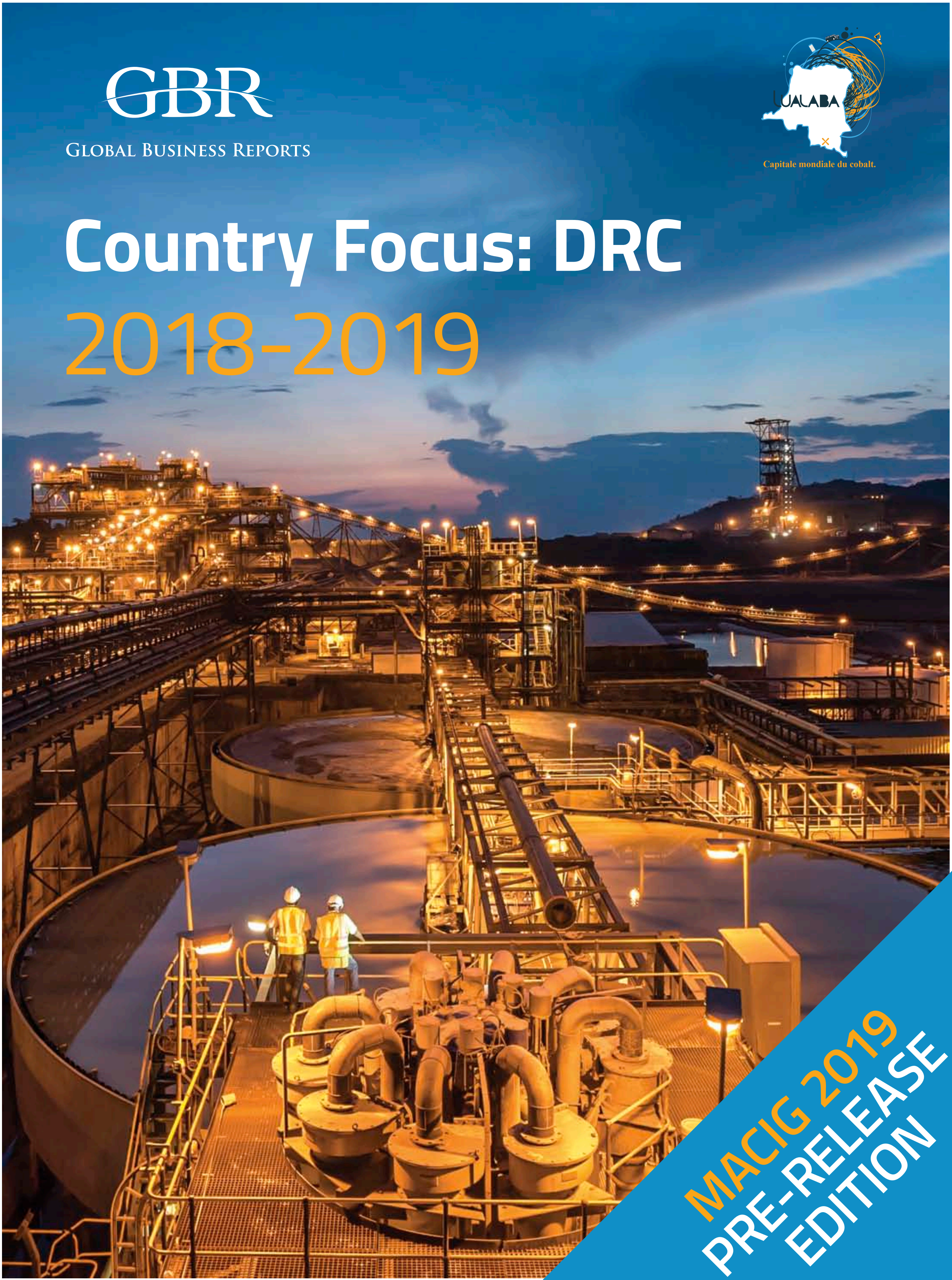
Global Business Reports

LUALABA

Capitale mondiale du cobalt.

Country Focus: DRC

2018-2019



MACIG 2019 PRE-RELEASE EDITION

BCDC: THE BENCHMARK FOR BANKING

IN THE DEMOCRATIC REPUBLIC OF CONGO

BANQUE COMMERCIALE DU CONGO
Building the future

BCDC has been supporting the Congolese economy and people since 1909. Stable and reliable in a highly challenging market, with its deep understanding of the Congolese economy and its exacting standards of management, BCDC has always known how to take advantage of its structural strengths and of cyclical opportunities. Its profitability, the best in the market, tells its own success story.

Like the elephant that stamps its logo, BCDC is a robust institution. With a 100-year track record, it inspires respect in the DRC and beyond. The long-term banking partner of all the major players in the Congolese economy, public and private (including mining and energy), BCDC has, over time, been successful in adding three other lines of business. Over the years, the Financial Institutions & Banks (FIB) line has carved out a reputation for quality with national and international institutions operating in the DRC. The SME market has been expanding for several years, while the Retail and Private Banking line has focused on the retail market, ranging from VIPs to employees, the self-employed and professionals.

UNFAILING CORPORATE BANKING EXPERTISE

Across and in addition to these lines of business, what sets the trading room apart is its professionalism and its unique, innovative position in the Congolese banking sector, primarily for corporate and institutional customers.

The rollout of these additional activities combines with the bank's comprehensive network across the DRC to deliver a service made all the more effective by the bank's governing principle of optimisation of resources, both human and financial.

HIGH-QUALITY FINANCIAL INFORMATION, PRODUCED IN ACCORDANCE WITH INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

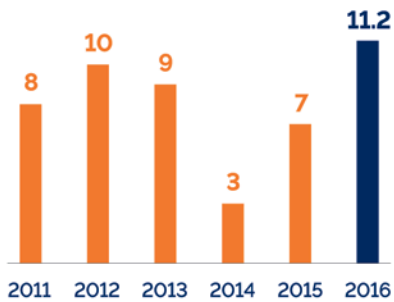
As part of this requirement of good governance, BCDC has published its financial statements in accordance with IFRS Standards since 2014. One of the first to do so in the DRC, this has enabled the bank to achieve a level of accuracy and integrity without equal, in particular for loans, provisions, the long-term benefits granted to staff, and for fixed assets, which are assessed at their appraised value and not on historical cost.

IN 2016, DESPITE A 30% DEVALUATION OF THE CONGOLESE FRANC, NET PROFIT REACHED RECORD LEVELS

This combination of best practice and expertise is reflected in levels of profitability all the more exceptional that they have been on target for the last ten years, despite the fact that regulatory constraints and economic situations can vary greatly. In 2016, despite the devaluation of the Congolese franc by more than 30% against the dollar, net profits hit a record $11.2 million. And these profits have never been achieved at the expense of fixed capital, which stood at $81.9 million in 2016 (compared to $73.2 million in 2015) after distribution of dividends amounting to $5.7 million. The same goes for net banking income, which was $80.2 million in 2015, rising to $93.6 million in 2016.

EVOLUTION OF THE NET RESULT

Net profit in USD millions



In short, BCDC is the bank that inspires confidence, the bank in which investors and major corporations place their trust.

"BCDC: THE BANK YOU CAN TRUST IN THE DEMOCRATIC REPUBLIC OF CONGO"

www.bcdc.cd

Dear Readers,

The Central African Copperbelt hosts some of the most important copper reserves in the world. Boasting grades as high as 4%, the sediment-hosted style deposits are estimated to contain around 5 billion tonnes of copper ore, and around 40% of the planet's cobalt reserves can also be found in the region. This 450 km stretch of mineral-rich land falls almost entirely between two African nations — the Democratic Republic of the Congo (DRC) and Zambia — which unsurprisingly represent the first and second largest producers of copper on the continent, respectively. As the commodity cycle wheels back into a boom phase, the price of copper has recovered substantially and cobalt prices have soared to historic heights.

In the first pre-release for one of our cornerstone productions, the Mining in Africa Country Investment Guide (MACIG), GBR dives into the key factors that will either inhibit or encourage investment flows into these two Kings of Copper. Although they both claim a share of the Copperbelt, the opportunities and challenges of investing in these neighboring countries diverge entirely from one side of the border to the next.

Zambia, long considered one of the most stable and peaceful nations in Africa, does not offer the high grades nor the same potential for cobalt found in the DRC. Conversely, while the mineral potential in the DRC is unmatched perhaps even globally, ongoing conflict and an uncertain political environment are simply unpalatable for the risk averse investor. The lingering impact of the copper downturn has depressed the services sector in both regions, but the recent upswing is breathing new life into the mining ecosystem. In the DRC, a new mining code has been met with loud rebuttals from many prominent international investors, and companies are adjusting to the new regulatory framework as an impending election contributes to a heightened sense of unease. Zambia continues to attract the attention of investors eager to tap into its well-established mining tradition, but diversification into other minerals will be critical for the continued success of the country's mining industry. The sharp eye will notice that the cover image for these reports is not copper; the Kagem emerald mine in Zambia and the Kibali gold mine in DRC demonstrate that while these countries' mining industries may be defined by copper, excellent prospects in other resources warrant greater attention.

In the pages that follow, we share with you some of the developments occurring in both jurisdictions ahead of our final MACIG 2019 report, to be released in February 2019 at the Mining Indaba in Cape Town, South Africa. We extend our deep gratitude to all of the industry leaders that took the time to share their valuable insights with us, and we present our preliminary analysis of both countries on the basis of their experiences. As 2019 approaches, we will continue our research across the continent and readers can look forward to our second pre-release focused on the West Africa region later this year. To all our readers, we always welcome your feedback or interest in being interviewed; please feel free to contact me at ldavis@gbreports.com.

Enjoy the read!

***Lindsay Davis,** Project Director and Journalist*
***Lina Jafari,** Project Coordinator*
***Emma Johannes,** Project Coordinator*

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Country Focus: DRC

MACIG 2019 Pre-release

GBR Global Business Reports

This research has been conducted by Lindsay Davis, Lina Jafari and Emma Johannes.

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Introduction

Risk — and opportunity — grows in the DRC

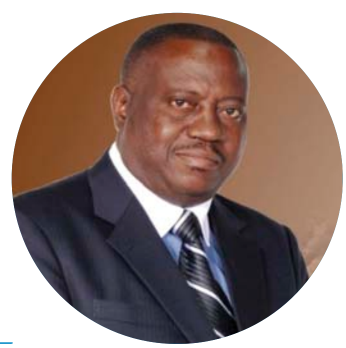
An election year in any African nation is met with trepidation by international investors, but particularly so in the DRC, where political upheaval and chaos are essentially institutionalized strategies for state control. Eight days after the assassination of his father Laurent Kabila in 2001, current President Joseph Kabila took the reigns of the country and has remained in power despite his two-term limit expiring in December 2016. Elections have been repeatedly postponed on the grounds that polling infrastructure was inadequate to ensure a fair vote, but an energized civil society has pushed continuously for democratic due process, often encountering deadly force in response. While many in the local mining community and internationally still question whether the election will indeed take place as scheduled in 2018, as the December 23 date hurtles forward, a buzz of campaigning activity indicates that there may indeed soon be a new president in the DRC.

Contributing to the intensifying climate is the recent promulgation of a new mining code, which was heavily opposed by some of the country's most important investors. Nonetheless, even as the industry adjusts for new layers of regulation and grapples with incorporating increased taxation into their cost profiles, production is ramping up and new exploration across a host of resources suggests that new investment has not been entirely deterred. Copper and cobalt remain the standout performers in the region, but the country's impressive credentials in other minerals — 1,100 minerals and precious metals ranging from diamonds to lithium — are capturing the imagination of the international investment community with projects like AVZ's lithium deposit in Manono, which was recently declared the largest deposit globally, garnering significant interest abroad.

Increasingly, mines are going underground in the DRC. The Glencore-owned Kamoto operation was the first, but giant despots such as Ivanhoe's Kamoa was well as several others looking at underground options presents an opportunity for the country's services and equipment sector. Heavier flows of imports and exports have created a particular buzz for logistics operators, which must cope with the country's poor infrastructure to facilitate the activity generated by the mining upswing.

At the end of the day, business as usual continues in the DRC, albeit punctuated by heightened tension as the election date draws nearer. While the political situation is complicated and shifts in the regulatory environment have brought about much criticism, key partners within government remain committed to supporting private investors. In the Lualaba province, the Hon. Governor Richard Muyej Mangez Mans has gained significant praise for his initiatives to promote opportunities to invest in his jurisdiction and his willingness to work closely with the private sector, including hosting an event in September 2018 to bring together key stakeholders in dialogue about the state of the mining industry. Despite the attractive commodity prices, it is likely that several potential investors are lurking in the wings, awaiting the outcome of an uncertain 2018 before taking the plunge. Perhaps this is prudent, but there are indications that the country has made substantial progress in reaching a relative degree of stability in the last decade. The DRC officially implemented the OHADA principles in 2012, which, although still unclear, established a stronger accounting and auditing legal framework. The country also began participating in the Extractive Industries Transparency Initiative (EITI) in 2014, meaning that now information on the revenues gained from the country's mineral resources are regularly reported. Large multinational companies like Epiroc and AEL Intelligent Blasting are investing in developing in-country assets, serving as a testament to their faith in the nation's potential, and, despite the undeniable challenges, many of the world's top mining companies persist in their operations in the country. With commodity prices picking up and the country's established mining community doubling down to wait out any disruption, the perfect storm is upon the country and only time will tell if 2019 will be the year that Congo takes off, or takes two steps backwards into chaos.

"The motivation behind the new mining code is the search for balance. Many of the countries mines have been operating under legislation that does not adequately account for the problems faced in our country. We were not well-positioned when the first mining code was passed, so it is not surprising that we have now decided to amend the mining code to better benefit the DRC. It impedes development when investors come here without engaging with local businesses, and it is unfair to take advantages of the DRC's mineral wealth without sharing the profit with the government. Moving forward, the objective ion the new mining code is to stop this inequity."



**Hon. Richard Muyej Mangez Mans,
Governor of Lualaba**

Doing Business in the DRC

Politics, regulation and the economy

POLITICS

When the DRC won its independence from Belgium in 1960, the country quickly fell into chaos as different political parties and internationally-backed proxies attempted to destabilize the control of the new government. The nation's first elected prime minister, Patrice Lumumba, had been a leading figure in the DRC's path to independence, and his relations with the Soviet Union and strong commitment to pan-Africanism and Marxist-inspired principles marked out the Congolese politician as a threat to Western powers. Shortly after being forced out of office, Lumumba was later assassinated. The American and Belgium governments, after years of both nations exercising control over the DRC's vast resource wealth, were suspected of involvement and in the era of the Cold War, the country's mineral assets — and particularly its high grade uranium — were too vital to fall under the control of what was feared could become a radical regime.

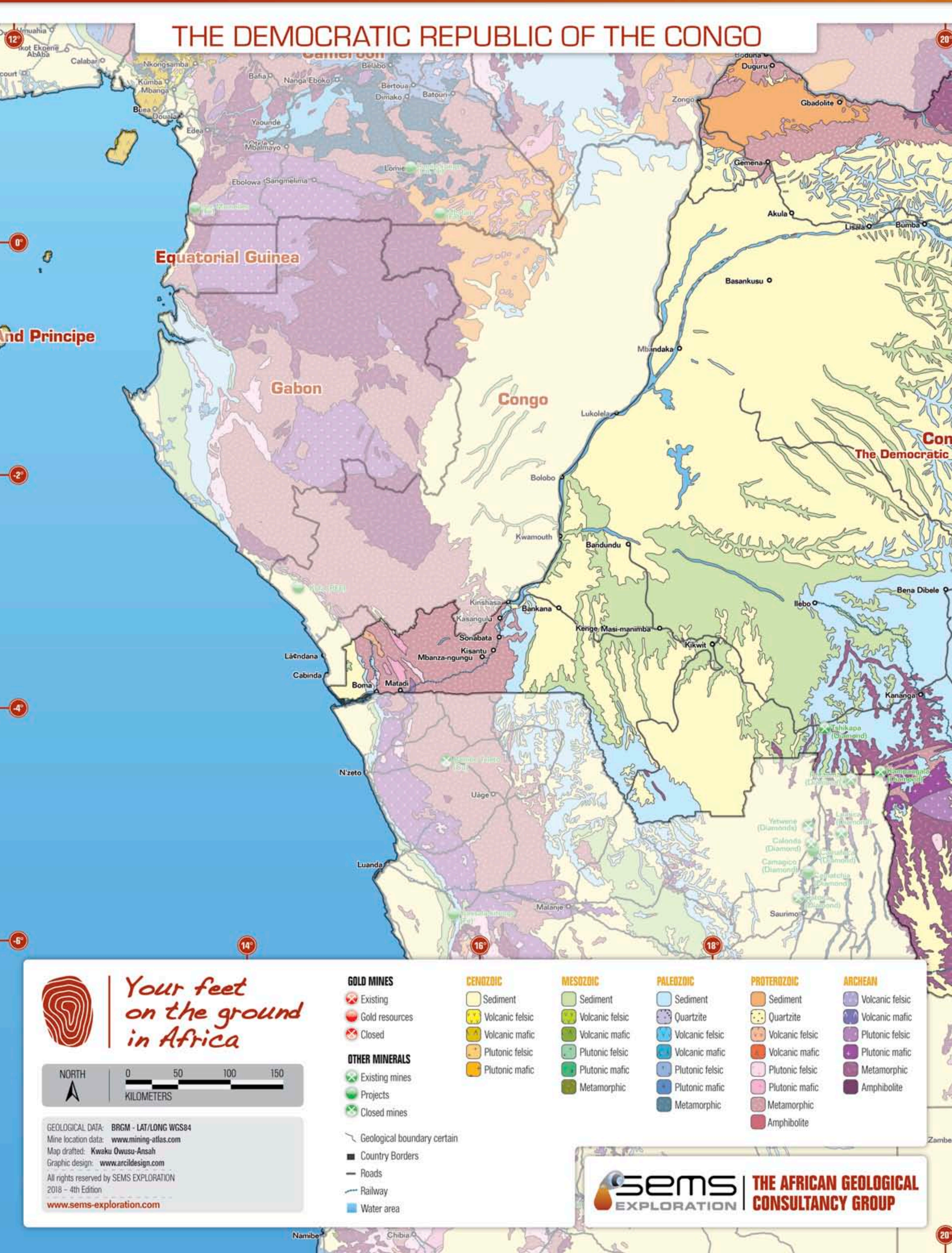
Less than two weeks after the DRC state had been born, supported by a force of western-supported mercenaries, Congolese national Moise Tshombe declared the southern Katanga province and part of the Kasai region independent from the rest of the country. This region contains the majority of the nation's mining activities in which Belgian, French and British actors had a vested interest. Eventually the U.S. and UN military forces brought the secession attempt to an end in 1963, when Tshombe stepped down from his declared role as President of the State of Katanga.

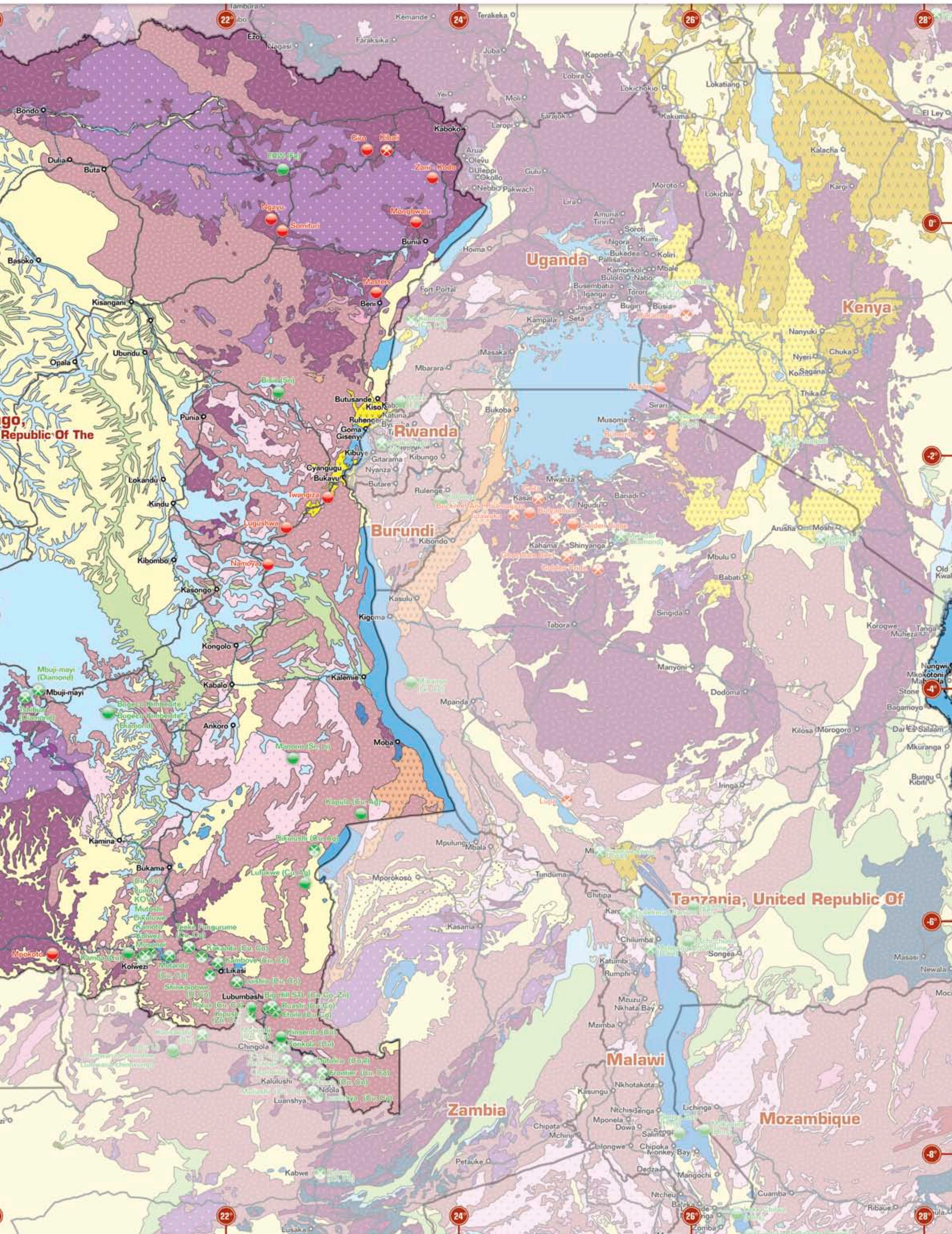
While the actors may have shuffled, nearly 60 years on and following one of the deadliest wars in modern history, the DRC's complicated geopolitics still cripple the country's ability to achieve sustainable economic progress — the exception being the wider Katanga region, which, in recent years, has seen relative growth and stability compared to neighboring provinces. Particularly under the leadership of former governor Moïse Katumbi, the province saw an economic revival through initiatives such as a ban on the export of raw minerals that increased tax revenue gathered in the region from US$80 million in 2007 to over US$3 billion by 2014. Given Katumbi's mounting power and perennial fears that the region may still one day attempt secession, the businessman-turned-politician was forced into exile and, in 2015, Katanga was split into four separate provinces in a move that effectively decentralizes the region's power.

According to the constitution, President Kabila cannot run for a third term and senior government officials have indicated that he will step down. Katumbi has remained on the fringe of Congolese politics and, in January 2018, put forth his candidacy for the presidency. At publication, Katumbi had been blocked from entering the country to complete the registration process by the deadline, and his chances look uncertain. In total, 25 have joined the running, notably the ex- Vice President Jean-Pierre Bemba, a former warlord recently acquitted of war crimes by the International Criminal Court, Vital Kamerhe, leader of the Union for the Congolese Nation party, and Félix Tshisekedi, leader of the country's oldest and largest opposition party, the Union for Democracy and Social Progress.

While it appears that President Kabila will ostensibly respect democratic process, rumors abound as to which candi-

THE DEMOCRATIC REPUBLIC OF THE CONGO





22°
24°
26°
28°
0°
-2°
-4°
-6°
-8°
Congo,
Republic Of The
Uganda
Kenya
Rwanda
Burundi
Tanzania, United Republic Of
Malawi
Zambia
Mozambique
Bondo
Dulia
Buta
Basoko
Kisangani
Opala
Ubundu
Punia
Lokandu
Kindu
Kibombo
Kasongo
Kongolo
Kabalo
Ankoro
Kamina
Bukama
Kolwezi
Likasi
Lubumbashi
Chingola
Kalulushi
Ndola
Luanshya
Mbuji-mayi
Mbuji-mayi (Diamond)
Bunia
Beni
Butusande
Kiso
Ruhengeri
Goma
Gisenyi
Kibuye
Cyangugu
Bukavu
Gitarama
Kibungo
Nyanza
Butare
Rulenge
Kibondo
Kasulu
Kigoma
Kalemie
Moba
Mpanda
Tabora
Mpulungu
Mbala
Mporokoso
Kasama
Tunduma
Chitipa
Karonga
Chilumba
Katumbi
Rumphi
Mzuzu
Nkhata Bay
Mzimba
Kasungu
Nkhotakota
Ntchisi
Senga
Mponela
Dowa
Salima
Chipata
Mchinji
Lilongwe
Chipoka
Monkey Bay
Petauke
Dedza
Mangochi
Ntcheu
Balaka
Zomba
Kabwe
Lusaka
Lichinga
Cuamba
Ribaue
Songea
Masasi
Newala
Iringa
Mbeya
Dodoma
Kilosa
Morogoro
Dar Es Salaam
Mkuranga
Bungu
Kibiti
Bagamoyo
Stone Town
Tanga
Korogwe
Muheza
Singida
Manyoni
Babati
Mbulu
Arusha
Moshi
Shinyanga
Kahama
Mwanza
Ngudu
Bariadi
Musoma
Sirari
Bukoba
Masaka
Mbarara
Kampala
Jinja
Fort Portal
Hoima
Gulu
Lira
Arua
Soroti
Kumi
Mbale
Tororo
Busia
Moroto
Kitgum
Pakwach
Nebbi
Juba
Yei
Kaboko
Kakuma
Lokichokio
Lokichar
Lodwar
Kalacha
Kargi
Nanyuki
Nyeri
Chuka
Thika
Kapoeta
Lobira
Terakeka
Kemande
Faraksika
Nagasi
Ezo
Moli
Laropi
Farajok
Lokitaung
El Ley
Kibali
Giro
Zani Kodo
Ngayu
Somituri
Mongbwalu
Masters
Twangiza
Lugushwa
Namoya
Mpokoto
Lupa
Golden Pride
Bulyanhulu
Geita
Buzwagi
Kapulo (Cu, Ag)
Dikulushi (Cu, Ag)
Manono (Sn, Ta)
Tenke Fungurume
Kakanda (Cu, Co)
Kambove (Cu, Co)
Luishia (Cu, Co)
Big Hill STL (Cu, Co, Zn)
Ruashi (Cu, Co)
Etoile (Cu, Co)
Kansanshi (Cu)
Konkola (Cu)
Frontier (Cu, Co)

date could serve as a puppet figure for his continued influence over state affairs. International powers are also quietly taking sides, with rumors circulating that China and Russia have been courting President Kabila to maintain his position. China has benefited immensely under the current President's regime, taking control of well over half of the country's mines. However, speculation that the United States has stepped in with incentives to encourage President Kabila to step down suggests that, while overt American influence has largely exited the county, the United States remains interested in the DRC's fate.

Historically, the DRC has suffered immensely under the strain of too many interested parties vying for power. Often used as the quintessential example of the Resource Curse, the country's extreme natural wealth has fueled this political feuding, and investors worldwide will only become more cautious as election day approaches.

THE NEW MINING CODE

The DRC's controversial new mining code was ultimately signed into law in May 2018, following a dramatic public battle between government and some of the world's largest mining companies, including Glencore and Ivanhoe. The previous code, promulgated in 2002, was thought to be one of the more investor-friendly regulatory frameworks in Africa. Now, mining royalties on non-ferrous metals have increased from 2% to 3.5% and notably a new "strategic substance" designation could require companies to pay a royalty as high as 10% on metals such as cobalt, which could produce a worldwide ripple effect given that the DRC contains nearly two thirds of global cobalt reserves. "Cobalt will play a globally significant role in the rapidly growing green industries such as batteries and electric vehicles. This means there will need to be dialogue between the mining community and the DRC to create a win-win dynamic that respects the development needs of the local population, while continuing to attract mining investors from around the world to promote sustainable growth," said Michael Demey, regional manager of the Katanga region for BCDC, a leading Congolese bank that has been operating for more than 100 years.

Generally, the updated code puts more emphasis on generating revenue for the local economy, but mining companies have argued that some of the new requirements are not feasible given the significant challenges of operating in the DRC and their associated costs. For example, the new mining code also requires the total export earnings repatriated into the country to increase from 40% to 60%, and that those funds be utilized in the DRC. Serge Bilambo, mining and metals head for Standard Bank in the DRC, explained the concerns over this obligation: "The challenge is to ensure that companies can find subcontractors capable of delivering the specific services that they need to the standards that they require. Many companies already struggle to use the 40%," he said, adding, "However, putting the new law in perspective, in a country like Zambia there is no requirement to repatriate export proceeds, whereas some places in West Africa require 100% of export proceeds be repatriated. The challenge is to find the appropriate balance and promoting initiatives to lift up the standards of local subcontractors so that they can compete."

Photo courtesy of Ivanhoe.

The import and export process in the DRC is already notoriously complex and, to keep track of this complicated and ever changing regime, mining companies typically enlist the services of local banks that can support them through the process through intimate knowledge of the many nuances in the system. "BCDC is particularly adept in assisting in following import and export processes. To import goods in support of production, licenses must be obtained that are accompanied with considerable paperwork that must pass through several institutions, ultimately resulting in thousands of documents that must be closely monitored to avoid huge penalties and fines," explained Demey. "After exportation, a certain percentage must be repatriated within a particular period of time with accompanying documents, which is an even riskier undertaking. BCDC has a long tradition in providing mines this critical service from our large back-office support team."

Dr. Mark Bristow, CEO of Randgold, which operates the Kibali gold mine, raised the issue of the new windfall tax, which he believes will have disastrous consequences. He explained: "Essentially, the tax rate is determined by the commodity price when the mine starts operating, rather than by the grade of the deposits. Mines in Katanga that were developed at different times will be affected differently: for example, if a company is mining two orebodies at the same time, but started mining one when the copper price was $3 and the other when the price is $2, one is penalized and will become a loss-making exercise because of the windfall tax. It is worth pointing out that in 2013, mines closed in Katanga because the copper price collapsed."

Dr. Bristow, one of the key voices among investors opposed to the changes in the new mining code, explained how the debates had led to a falling-out between some of the country's most prominent investors and the nation's key industry association, Federation of Congo Enterprises (FEC). "When we were discussing the mining code with the President, the mining industry sat on one side of the table, and the government sat on the other side of the table with FEC. This presented a huge conflict of interest that we were uncomfortable with. We approached the Minister of Mines and said that we would like to represent ourselves," he said.

If the increased revenue generated by these changes is reinvested into critical development projects, the financial effects felt by the mining community could theoretically be offset by improving the country's overall economic well-being. "The new mining code certainly has financial implications for us, including new taxes to pay on imports and exports. However, as long as commodity prices continue to remain strong, we do not expect much impact. If the government will contribute more support to the mining industry through this added revenue by strengthening key infrastructure like transport and power, then I believe we will ultimately see a positive impact," said Chetan Chug, CEO of SOMIKA, a diversified mining company operating in the DRC since 2001.

The key question going forward will be how existing investors are treated under the new code. Mining companies operating under international investment agreements can use the stabilization clause in the 2002 code to engage the government in costly arbitrations over a protracted time period — a lose-lose situation for all stakeholders. "For new investors, these are the new rules and the new status quo. For existing investors, discussions are ongoing to reach a compromise that benefits all stakeholders. Existing investors have made significant investments at a time when the environment was more complicated. They should then benefit from their early commitment as they invested in a difficult period for the country," said Yannick Mbiya Ngandu, director for Trust Merchant Bank (TMB).

Ultimately, the objective of the changes is to bring increased benefit of the country's natural wealth to its population. Whether or not the new code will achieve this amid a state apparatus riddled with corruption remains to be seen.

ECONOMY AND FINANCE

While the split of the Katanga province may underpin an undercurrent of geopolitical strategy, it also aims to concentrate more energy into the development of smaller territories. The country depends heavily on mining as the largest single contributor to GDP followed by the telecommunications sector, and when commodity prices crash, as they did in 2015, the entire economy suffers. To counter this effect, provincial governments are promoting alternative investment opportunities in their regions, with agriculture and tourism identified as the industries with the most potential within the Copperbelt region. Governor Richard Muyej of the Lualaba province, which hold's the largest share of the country's mining assets, is leading an energized campaign touting his jurisdictions touristic potential. Highlighting everything from the dramatic waterfalls of Kayo in the Lubudi territory to the construction of a new fountain plated with malachite in the capital city of Kolwezi, Governor Muyej is determined to change the face of the Lualaba province through diversification.

"We propose that a sliding royalty system would benefit the industry and the country immensely. It has already proved beneficial in Côte d'Ivoire, Senegal and Burkina Faso. Our sliding scale proposal, given the current price, would give the government an immediate step up in revenue. It would also be beneficial in terms of industry sustainability; under the current system, the average grade of a copper mine in the DRC is 3%, not because that is the typical grade of the resources, but because that is what you need in order to mine profitably and competitively."

Dr. Mark Bristow, CEO, Randgold

While opening investment to new sectors to decrease reliance on mining will help, the financial impact of the new mining code and the political risk remain deterrents. The government has begun to make use of other fiscal tools to design a more favorable environment for investment. For example, the recent liberalization of the insurance sector, which was formerly monopolized by a state-owned company, could soon help to lessen interest rates for loans in the DRC. To secure sufficient capital for projects, companies are largely obliged to seek financing from international lenders, but local alternatives should bring the cost of interest down.

Another new development from the Central Bank attempts to incentivize companies to make use of the SME sector by making leasing activities more attractive. "Leasing fees are now tax deductible," explained Mbiya. "Rather than buying equipment, companies can take advantage of this opportunity to lease equipment, utilizing borrowing structures provided by banks like TMB."

Overall, the palatability of the high-risk, high-reward paradigm of the DRC will not come down to small gains in leasing or lower interest rates. And, despite the impending election and shaky relations with the country's top investors, new investment continues to come in. While some investors may be waiting the outcome of 23 December, many more are braving the uncertainty to take advantage of the country's vast potential as the mining uptick surges forward.

Michael Demey

Regional Manager, BCDC

"Congolese banks can best assist international investors by helping to navigate challenges around the complex regulation of DRC."

BCDC has experience operating in the DRC that extends over 100 years. How have you seen the impending election and new mining code impact investor sentiment and what role is the Bank currently playing to assist clients with mitigating the associated risks?

The new mining code is on the way to be released. On the top of that, the political election scheduled to take place at the end of the year contributes to an atmosphere of uncertainty in the DRC. For over a century, BCDC has been involved with most of the significant mining assets in the wider Katanga region, and we are therefore closely monitoring these developments.

Can you elaborate on the most common risks your clients' encounter and how BCDC can provide assistance?

Large-scale mining investment takes place outside the country. Congolese banks can best assist international investors by helping to navigate challenges around complex regulation of DRC. This is critical given the huge investments made by the mining in DRC and the penalties associated in case of non-respect of the rules. BCDC is then particularly adept in assisting in following their import and export processes. From the importation of goods in support of production to the exportation of the ore, licenses must be opened by the Congolese banks in order to validate the process and allow for importation and exportation.

How are mining companies coping with the large power deficit in the DRC, and to what extent can the local banking sector play role in financing power-related projects?

Many of the mining companies are engaged in their own generation projects to power their activities. Most of the time, this includes rehabilitation of ongoing infrastructure owned by the public electricity company called "SNEL". This kind of deal could be concluded through an agreement with SNEL in order to pre-finance the project in deduction of the future invoice to be paid to SNEL by the miners. National banks can play a role of advisors in order to smooth the operation and the negotiation.

How has the influx of Chinese investment impacted the Congolese banking sector?

We have been closely watching the ongoing trend in Chinese interest in the region. This movement of Chinese investment into the DRC is mostly related to their interest in cobalt. It's seen as a strategic move in order to secure their future investment saying that cobalt would be one of the next strategic commodities. Given the fact that most of mines in DRC are now operated by Chinese interest, it represents a shift to the sector and we have to adapt to it. For instance, BCDC has recently hired a Chinese officer in Lubumbashi and a BCDC delegation has just returned from China. We are closely following the mining trends of Chinese companies and we are adapting our strategy in order to answer to this new kind of customer

What final message would you give to our international readership about the reality of operating in the DRC?

The international community is closely watching the DRC because the country contains huge deposits of copper and cobalt. Cobalt could play a globally significant role in the rapidly growing green industries. The run on Cobalt price is vertiginous with the largest reserves known in the world based in DRC. Whether we want it or not, DRC is a strategic place for the next coming years. A strong political vision and pragmatic approach from different companies will help to bring up DRC's overall economy and standing. This compromise between the mining community and the DRC will create a win-win dynamic that respects the development needs of the local population, while continuing to attract mining investors from around the world to promote sustainable growth.

Production and Exploration

Geological and Geographical Opportunities Abound

SOME HIGHLIGHTS IN COPPER + COBALT

Despite fierce backlash over the new mining code and apprehension over the upcoming election, copper and cobalt production has ramped up in the DRC as both new and old operations are picking up pace, sparking a flurry of activity throughout the entire mining ecosystem. Reuters reported that in Q1 2018, the country produced 296,717 metric tons (mt), up 8.2% from the same period on year prior, and cobalt production increased by an even greater margin of 34.4% to 23,921 mt. With cobalt prices soaring to a record high of US$90,000 and a general improvement in the price of copper, companies are well-incentivized to push forward with their operations.

Glencore, which is the largest copper producer in the country and contributes over 25% of the world's cobalt output, has been entangled in a series of legal battles. The company was slapped with sanctions by the U.S. in December 2017 because of its affiliations with Israeli diamond mogul Dan Gertler. Nonetheless, its subsidiaries in the DRC have continued operations and, in Q4 of 2017, Mutanda's sourced production reached historic highs of 51,500 mt of copper and 23,900 mt of cobalt. The Kamoto Copper Company (KCC), which is operated by Glencore's Katanga Mining subsidiary in a joint venture with Gécamines, has commissioned a new acid plant to be completed in 2019 in order to reduce its dependency on import of sulfuric acid, which had held production back.

Ivanhoe's Kamoa-Kakula project, considered to be the world's largest undeveloped high-grade copper discovery, is hotly anticipated by local subcontractors that see significant opportunity once the project begins operations. However beyond its copper credentials, the company also recently updated the indicated mineral resource at its Kipushi zinc project to 11.8 million mt at 35.34% zinc, containing 9.2 billion pounds of zinc, 8.7 million ounces (oz) of silver and 24.4 million oz of germanium.

Within the Lualaba province, several Chinese companies are operating alongside Ivanhoe and Glencore; notably, China Railway in a joint venture with Sinohydro operates the Sicomines copper-cobalt mine, which exported 115,000 mt of copper concentrate and 20,000 mt of copper cathodes in the first half of 2017, according to Bloomberg. Sicomines is a compelling case study of a model being pursued around the continent, whereby mining rights are exchanged for the construction of key infrastructure projects.

Several recent transactions have granted Chinese companies control of some of the country's most notable assets, such as the Tenke Fungurume mine (TFM), which is one of the world's largest copper-cobalt deposits and spreads over an area of 1,500 square km on two concessions. TFM recently changed hands from American-based miner Freeport McMoRan when the company sold its 70% share in the asset for US$2.65 billion to China Molybdenum (CMOC). Over the next two years into 2019, the company retains a contingent consideration to earn US$60 million if the copper price breaches US$2.5/lb and an additional US$60 million if cobalt exceeds US$20/lb.

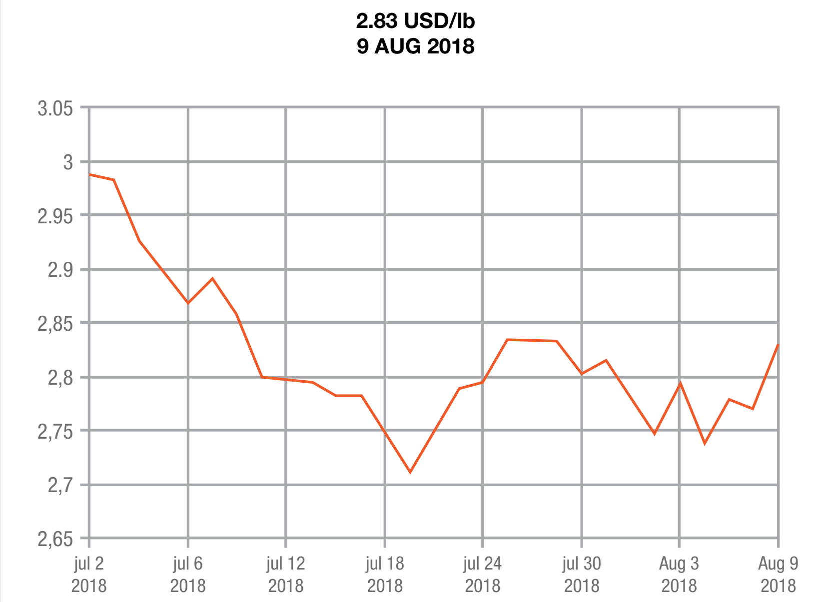
China Nonferrous Metal Mining (CNMC), recently began construction of a smelter in the Lualaba province that is expected to produce 120,000 tonnes of copper blister by 2020, representing an investment of US$440 million. These two large Chinese companies seem likely candidates to potentially purchase the Frontier mine, currently owned by Kazakistan-based mining conglomerate Eurasian Resources Group (ERG). ERG also operates copper-cobalt operations Boss Mining and Comide, and is attempting to put its Frontier mine on the market once more after failing to sell it several years prior.

SOMIKA, a fully integrated mine-to-metal company with ties to India, started 2018 by taking 100% control of its concession Luputo 2590, where previously its Iverland subsidiary held 80%. Theses plans align with the company's ambitious vision to increase its copper production to 70,000 mt/y and its cobalt production to 7,000 mt/y by 2020. Rubamin, another Indian company, expects it 2018 copper prodcution to reach 2,000 mt/y and cobalt production to reach 2,000 mt/y. The company's current capacity is

"Currently 100% of the country's tin, tantalum and tungsten, and around 20% of cobalt and copper originates from ASM production. The DRC Mining Code addresses ASM operations and efforts are on-going to further formalize and regulate the sector. We believe that responsible public and private businesses have an important role in the ASM ecosystem especially as it relates to workplace health and safety, responsible environmental practices, and working with communities in and around artisanal mine sites to help with long-term sustainable development initiatives."

Yves Kabongo, DRC Managing Director, Cobalt Blockchain Inc.

COPPER PRICE



Source: www.infomine.com

25,000 mt/y of copper, and some facilities have been diverted take advantage of the attractive trajectory of cobalt. By 2020, Rubamin aims to increase its copper output to 20,000 mt/y and cobalt to 4,000 mt/y. "Our seventh furnace will be commissioned by the end of June 2018, which will allow us to restart our production of cobalt concentrate and we are also constructing a plant to make cobalt hydroxide," said Navin Dalmia, MD and CEO of Rubamin.

Artisanal miners and the associated problem of illegal mining are not unique to the DRC, but the country may soon serve as an example for how to resolve the issue. Most educated estimations suggest that artisanal miners contribute roughly 15% of the DRC's annual cobalt production, which makes them a significant source of global supply. However, in a region often associated with problems such as funding conflict and child labor, cobalt obtained through artisanal mining is often seen as taboo, with the likes of Apple cracking down on their supply chain management. A Toronto based company called COBC, leveraging experience souring conflict-free metals in the region, is hoping to tap into this sector by using a blockchain platform to certify mineral traceability in compliance with OECD due diligence procedures. "Think of a permission-based platform that automates trust between supply chain participants with each actor building a trust score over time," explained Yves Kabongo, DRC managing director of the company. "A block-chain or distributed ledger is a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions. Such a system would have advantages over the incumbent paper-based systems or a centralized database in terms of transparency, security and immutability of the data, which are essential concerns in an environment such as that encountered in post conflict zones like the DRC."

COBC, which currently has supply agreements in place with the Lualaba province's leading cooperatives, intends to work with artisanal miners to provide much-needed modern infrastructure and technical training. If successful, the implications of such a system could be huge for global artisanal mining operations by helping to enhance safety and productivity.

DIAMONDS: AN OLD FRONTIER WITH NEW PROSPECTS

The DRC has long been known for its diamonds, and its industrial diamond production falls second only to Russia, with 75% of the world's crushing bout —the lowest grade diamond used in steel mortars — coming from Congo, according to Britannica. However, when the price of copper and cobalt became more attractive than the labor intensive process of diamond extraction, exports dropped to just 17.1 million carats in 2015, compared to 33 million carats exported 10 years prior. Part of the DRC's recent failure to recognize its full diamond potential can be attributed to a lack of investment into adequate infrastructure and exploration activities. Societé Minière de Bakwanga (MIBA), the state-owned diamond mining company, is largely a dormant entity that suffers from a debt crisis. Instead, the task has been largely left to illegal miners scouring riverbeds and sifting through gravel in search of the valuable stones. Furthermore, the sectors reputation has been tainted by shadowy associations with funding armed conflict in the DRC and Angola, as well as the scandal following Israeli billionaire Dan Gertler, who is said to have made billions from corrupt dealings that gave him a monopoly over the DRC diamond industry.

There are indications that things may be changing. "More recently, we have diversified into the middle of the country to assist diamond mining companies. Exploitation of diamonds has been slower to develop in the DRC, but the fact that [our clients in the region] have started consuming our products tells us that production has begun," said Maximilien Emedi Madjani, financial director of AEL Intelligent Blasting in the DRC.

As the first entrant into the DRC blasting sector after its privatization, the company is leveraging its in-country experience and historical expertise with diamonds to tap into the opportunity. "Our clients are looking to exploit kimberlite rock in the DRC, and that technology and know-how has been in the AEL family for years because of our long experience working with large diamond producers in South Africa such as De Beers, where AEL Intelligent Blasting has been instrumental in the development of the Venetia mine," explained Madjani.

The DRC's Kasai-Oriental and Kasai Occidental provinces hold much of the country's diamond reserves, which are thought to be the second largest globally and occur mostly in kimberlite and alluvial deposits. Although it suffers from periodic outbreaks of violence and severe poverty, a few players have ventured into the region. Société Anhui Congo d'Investissement Minier (SACIM), a 50-50 joint venture between the China-based Anhui Foreign Economic Construction Group and the DRC government, has a mining presence in the region. In the southeast of the country near its border with Angola, Sweden-based Africa Resources AB has declared an inferred resource of more that 2.4 million carats at its concessions on the Tshikapa river, a historic site for diamond mining.

3TG:

Tin, tantalum, tungsten and gold, (3TG), while controversial as designated conflict minerals, nonetheless offer interesting investment potential in the DRC if they can be sourced in a responsible manner.

Alphamin's high grade tin deposit, located in the North Kivu province, is slated to come online in 2019 and reach steady production by the end of that year. The company expects to be one of the lowest cost tin mines in the world, producing 9,642 mt/y tin at a cash cost of US$8 837 per mt produced, and to experience a payback period of just two years. SOMIKA, which is currently the country's largest tin producer, is exploring thought the wider Katanga region while also looking into opportunities in the Maniema province for tin as well as tantalite, despite the logistical challenges presented by the region.

Randgold, which operates the Kibali gold mine in a joint venture with AngloGold Ashanti, should beat its 2017 production of 596,225 oz by 22% to generate 730,000 oz of gold in 2018. In an on-going quest to fully optimize its mining operation, in July 2018, Kibali transitioned to a Congolese led underground mining operation without any mining contractors. "We are committed to developing the Congolese industry so we never use international service providers that do not use a local representative. We have the same attitude towards our own staff. The best underground miners in the world are Australians; we have been bringing them over to Africa and paying them to teach our workers so that we can transfer that skill and technol-

"There are many exciting exploration opportunities in the DRC beyond copper, such as a belt of tin and lithium found from Manono all the way to Kalemie. The next great discovery is out there if the mining community uses the data available from geology studies to support their exploration initiatives."

Susa Maleba, DRC Country Manager, SRK

"I cannot emphasize enough, how important complete and transparent engagement with our host communities is to providing a platform of security; symbiotic relationships; sustainable development and growth. Historically, due to a number of circumstances, Banro has alienated its host communities over the past several years. This has led to disruptions, work stoppages, security issues and other social problems that have affected the mines' ability to be a high performing, low cost producer. We need to re-establish that trust and those relationships by acting / executing and delivering on our obligations and promises made in the past."

Brett Richards, CEO, Banro Corp

Chetan Chug

MD, SOMIKA

"The tin market is growing because in addition to cobalt, nickel and lithium, the development of electrical vehicles also requires tin."

Can you share any recent updates for SOMIKA and how they will help the company achieve its 2019 vision?

We began 2018 by taking 100% control of our concession 'Luputo 2590'. Our subsidiary, Iverland, used to hold 80%, with another partner holding 20%. We were also able to discuss with Gécamines the transfer of the B2590 amodiation from Iverland to Somika because of our strength in terms of processing. Somika is now a fully integrated mine to metal operation, and we are now planning the expansion of 70,000 mt/y of copper by 2020 and 7,000 mt/y of cobalt and these changes will make this even more achievable.

SOMIKA is currently the largest exporter of tin in the country, but Alphamin is set to come online in 2019. How do you expect this increased production to impact SOMIKA and the local tin market?

The tin market is growing because in addition to cobalt, nickel and lithium, the development of electrical vehicles also requires tin. The development of Alphamin can only be a good thing because the increased quantity of product exiting the country will help streamline certain conversations between the government. I believe the global market will be happy to see there is another valuable mineral available from the DRC. Rather than viewing each other as competitors, Alphamin and SOMIKA will share complementary knowledge and experiences about processing and exploration strategy.

SOMIKA operates across a full range of different metals. Where will be the primary focus for the company heading into 2019?

We will continue to be stronger in copper and cobalt than tin and tantalite. We are also starting to look into lithium businesses. We will also continue to look for future opportunities in rare earths by evaluating potential of different concessions. By 2019 and 2020, we may began to strengthen the diversity of our portfolio with other valuable metals.

Where does SOMIKA see the most opportunity for exploration of tin and tantalite?

Currently we are remaining focused within the four new provinces that comprise the former Katanga region, but we are also looking at opportunities in the Maniema province in the Kindu area. Because of logistical challenges, we have slowed down a little, but that remains an area of interest for the expansion of our tin and tantalite business.

How will the new mining code impact SOMIKA?

The new mining code certainly has financial implications for us, including new taxes to pay on imports and exports. However, as long as commodity prices continue to remain strong, we do not expect much impact. If the government will contribute more support to the mining industry through this added revenue by strengthening key infrastructure like transport and power, then I believe we will ultimately see a positive impact.

How has SOMIKA seen the artisanal mining of cobalt evolve following the company's initial support of international controls?

Cobalt discovery and entry into the market first began in this country in 2002 through artisanal mining, which is often unsafe and done without proper training or equipment. Over time, this dynamic has changed and today, in terms of volumes, artisanal mining of cobalt accounts for around 10 - 15% of market production. This movement towards structured mining and processing operations will continue, which is a positive development, but artisanal mining is a livelihood and if you take that away without providing an alternative option, problems will arise. As a mining company, we are searching for other options for artisanal workers to see how we can help. SOMIKA expects to implement a strategy in 6-8 months to put in place an education system for the children of artisanal miners, in addition to providing training in certain soft skills.

What vision does SOMIKA have for itself going forward?

SOMIKA will continue to focus on reaching our copper and cobalt production targets, but apart from that, we will also look to develop our other services-based companies in our Group. These companies ensure alternative sources of employment, sustainable local entrepreneurship, and reduced imports.

Navin Dalmia

MD and CEO, Rubamin

"The 2018 first quarter supply of cobalt of this country was 25,000 mt, and with the current trajectory of production, the DRC alone will be able to produce around 100,000 mt/y."

What is the current production expectation for Rubamin, and what are your objectives heading into 2019?

Expected production of copper for 2018 will be 12,000 mt, in addition to 2,000 mt of cobalt. Currently our capacity is 25,000 mt/y of blister copper, and we have diverted some of our facilities to produce cobalt given the positive trends in the cobalt market. By 2019/20, we are aiming at taking an advantage of the rising metal prices and increase the copper output to 20,000 mt/y and cobalt to 4,000 mt/y. This will depend on how the market evolves because cobalt pricing is dependent on so many factors.

What trends have you identified as critical for driving the price of cobalt?

At the moment, world demand for cobalt is 100,000 mt/y, and around 70% of the supply comes from the DRC. The 2018 first quarter supply of cobalt of this country was 25,000 mt, and with the current trajectory of production, the DRC alone will be able to produce around 100,000 mt/y. Therefore, we believe the current price is not sustainable, and when the prices inevitably decline, we will see many smaller players forced to exit the market. For Rubamin, a price at US$30 will allow us to make a reasonable return as long as we maintain our focus on efficient mining practices.

Can you elaborate on the investments Rubamin is making into its facilities to take advantage of rising commodity prices?

Our seventh furnace will be commissioned by the end of June 2018, which will allow us to restart our production of cobalt concentrate, and we are also constructing a plant to make cobalt hydroxide. Additionally, we are bolstering the capacity of our engineering services, including motor rewinding and transformer repairing and adding several machines for drilling, so overall the company is gearing up in anticipation of significant growth.

With increased exploration dollars available in the market, how is Rubamin's drilling service experiencing the change in the market?

Despite increased competition from the Chinese, we are seeing significant demand for people looking for the high-quality service we offer. Our recovery machines meet international standards, and our core recovery record is very strong. We have created our own niche in the market and invested US$2 million and purchased six new machines in 2017, so we are very bullish about this market. We see the majority of exploration interest coming from China, however there are still several junior companies coming from Canada and Australia. These new players in the market see the potential in DRC, especially for cobalt and lithium in addition to copper. Once the power issue has been addressed, we expect levels of productivity will be very high.

When it comes to optimizing your operations, can you highlight what presents the greatest challenge in terms of cost-efficiency?

Logistics presents a major challenge, particularly because of the lack of manufacturing in this country means that the level of imports and exports do not match. For example, sometimes there is a shortage in the chemicals required for the leaching plants. The DRC is not processing sulfide ore, and sulfuric acid is expensive to procure because it must either be imported or made my burning sulfur.

How do you see the evolving situation around the new mining code playing out?

Once the new mining code has been fully implemented, I believe any flaws that are detrimental to the industry will be revealed and the government will take appropriate action to solve these problems. I am very optimistic that this will be the case just as it has been in the past. The majority of the country's revenue is dependent on mining, and the government cannot afford to lose these major investors.

What is the vision and growth strategy for Rubamin over the next 2-3 years?

We are looking to double our current levels across all parameters. In terms of efficiency, we ARE taking advantage of the opportunities presented by training up locals, because at the moment manpower is a significant challenge given the shortage in capable drivers and operators. However, these are all temporary issues for us, so Rubamin is very optimistic for the future. As per our yearly review of circuits and projections, we are looking to invest more in the country.

ogy to our own workforce. We will always have professional experts to help guide us, but our main workforce, both on the sites and in management, will always be Congolese," said Dr. Bristow, CEO.

The other large gold operator in the region, Toronto-based Banro, has suffered from acute security issues at its Namoya and Twangiza mines. The company has brought in a new CEO, Brett Richards, to stabilize the company and turn its fortunes around. In addition to stabilizing and optimizing the company's two mines, Banro will also work towards the development of its Lugushwa and Kamituga gold projects with the vision of eventually bringing four operational mines to the region. Richards has stated that core to his strategy will be evaluating how to better engage with neighboring communities.

"The new strategy is to reshape and restructure the company in every area of the business, and in every discipline of the company, in order to increase production / lower costs and return to positive cash flow," he said, adding, "We will be diligently working to rectify all of these technical and social issues, through putting the "right people, in the right places, doing the right things, all of the time."

EXPLORATION

Despite claims that the new mining code will deter new investment into the country, exploration has picked up as appetite increases with rising commodity prices. "This year we are seeing many new faces, especially out of Australia and Canada, looking for exploration prospects in copper and especially cobalt, as well as other battery minerals such as lithium and nickel," said Tobias Posel, director of GeoQuest, a consultancy and contracting business focused on exploration, environmental services, hydrogeology, geo-technical services, GIS and related services. "The demand began last November and picked up through the festive seasons, when it was possible to visit sites, draft reports, verify projects and propose the deals to new clients," he added, noting that much of the new Greenfield projects and advanced Brownfield exploration is taking place within the wider Katanga region.

Photo by GBR.

African Battery Metals, seeing an opportunity to take advantage of the trend towards renewable energies, has recently acquired copper-cobalt concessions in the DRC that will now take priority over its Ferensola iron/gold/coltan project located in the north of Sierra Leone. However, while copper and cobalt remain the favorites, the DRC has impressive credentials in other minerals that should not be overlooked. Ivanhoe's Kipushi project hints at the country's potential for zinc, and limestone, iron ore and coal are all also present, albeit less attractive when weighing the risk factor. A high-grade uranium trend south of Kolwezi that runs to Shinkolobwe remains an untapped resource because of restrictive policies that allow the president to maintain the right to reject applications.

Notably, ASX-listed AVZ Minerals' discovery of what is thought to be the world's largest untapped lithium deposit in the Tanganyika province sparked a race to better understand the DRC's lithium potential in the concessions surrounding the discovery. Companies have seen their market capitalization rocket upwards through "nearology" arguments, but AVZ remains the clear frontrunner for investment.

The company recently completely a 15,000 meter diamond core drilling campaign and announced its maiden mineral resource at 259.9 million tonnes grading OF 1.63% lithium for 4.25Mt of contained lithium oxide, confirming that it is the world's largest lithium deposit with the second highest grade globally.

Overall and despite the sense of heightened risk due to a new mining code and the upcoming election, exploration does not seem to have suffered and is in fact drawing more investment. "We have seen our price increase on the back of expectations of the resource being confirmed," confirmed Nigel Ferguson, managing director of AVZ. "In fact, we have not seen any slow down in investment other than a short period during the transition from the old code to the new one."

"The positive vibes are stronger than any negative sentiment, with companies out of Perth and Toronto visiting with increased frequency that previously would not have ventured into the DRC. The decentralization in the southern part of the country has concentrated power in places like Kolwezi, making it possible to do deals outside of Kinshasa, which has helped investors swallow expenses of operating in the country to hit the ground running."

Tobias Posel,
Director, GeoQuest

Service Providers

Taking Advantage of New Opportunities

A well-established community of distributors, OEMs and mining contract services are largely based between Lubumbashi and Kolwezi. A push towards underground mining and geographic and geological diversification, as well as new opportunities in other industries, has allowed service providers in DRC to remain afloat despite tough conditions in recent years. As the DRC's mining landscape increasingly picks up pace, new entrants are venturing into the fray. Leveraging its experience providing underground roof support systems in Zambia and in South Africa, New Concept Mining (NCM) sees an opportunity to enter the DRC market. "DRC represents a growing opportunity for us because a number of underground mines that were closed before have since been reopened, thus availing us a chance to put our products into this market," said Ivor Chanda, sales director for Africa at NCM.

For companies with mature in-country operations, diversification in other sectors has allowed for some relief when unattractive commodity prices dry up the available capital to spend on subcontractors or new equipment. "Mining represents around 90% of our Congolese business, while construction and transport are growing every year," said said Mamadou Sow, country manager for BIA DRC. "There is a significant market for construction and transport because, where there is mining, there is a need for large power and transport solutions," he added.

With claims that the gold-rich Eastern region of the country could become "the new Katanga," many service providers and equipment companies are exploring the possibility of expanding to this region with the aim of supporting projects like Banro's two gold mines, as well as tapping into the opportunities in agriculture throughout the country. DEM Group, the official distributor of John Deere, is a prime example of this two-pronged approach to both geographic and industry diversification. The company is looking to open an office in Goma, and relocated its country headquarters to Kinshasa in order to support its activity in the agriculture sector. "Previously, we were depending on the mining sector and the Katanga region, but the decision to develop agriculture allowed us to survive the impact of unattractive commodity prices. Diversifying into different sectors is an important part of our core strategy because the downturn in mining will inevitably happen again," explained Gaëtan Falesse, GM for DEM Group DRC.

DEM is also expecting to see new demand for its line of GHH products given a recent trend towards underground mining in the DRC. Ivanhoe's massive Kamoa project is an underground operation, and Glencore's Mutanda operation is also looking at opportunities deeper below the surface. Reliant Congo, an underground subcontractor with its roots in Peru, opened its DRC operations in 2009 to service KCC. The company has grown to include a presence in Kolwezi in addition to its Lubumbashi office, and has also found work in the East with Alphamin. Using professionals from experienced underground mining nations Peru and South Africa, the company is able to pass savings to its clients by training locals to work in underground environments. "Reliant eventually plans to start a mining school to provide technical training," said Joseph Sandon, director. "We will bring Simulators because underground machines are very expensive and a bad operator can easily destroy a machine."

Within the equipment sector, increased demand for automation suggests that the DRC mining industry is maturing. Large mining companies in particular are looking for mechanisms to enhance efficiency and increase productivity to take optimal advantage of rising commodity prices. Automated processes cut

"We first evaluate the level of automation that a customer can handle, which includes assessing their network capabilities. Support starts with understanding what the customer can do and what they need, and also their capacity to work with our technologies."

Stephane Goupil, Country Manager, Epiroc DRC

labor costs and use advanced technology to identify even the smallest gains in efficiency. Epiroc, a global leader in innovation, has recently experienced interest for the first time in automated features such as auto drill and leveling and GPS control navigation. "Within our range of products, we have the more basic equipment as well as the high-end, fully automated and fully navigation and information controlled designs. The large global mining companies that are already using these tools elsewhere in the world are now starting to look at this option for their DRC operations," said Stephane Goupil, country manager for Epiroc DRC, adding that because automated equipment are easier to use, the burden of finding highly specialized laborers in the DRC is also lessened.

Automation has also gained traction because of its ability to predict malfunction in the machinery before it arises, cutting the costs of maintenance significantly. "The CAT Connect Suite represents a range of products that are linked to machine monitoring, payload technology and safety systems. These systems connect to a control center where they can monitor machine and operator performance simultaneously, providing real-time tracking of machine parameters and operator efficiency," said Deon Heyns, CEO of Congo Equipment, the official distributor for CAT in the Katanga region. "The purpose is to detect problems before they arise because preventative maintenance is much more cost-effective, as well as to ensure equipment is being used optimally, which also allows for significant cost savings," he confirmed.

On the other end of the spectrum, some in the field of equipment believe there are huge opportunities in providing more low-cost equipment to the market. Founded just recently, Rex provides mining support services with the objective of demonstrating that a quality result can be achieved with less expensive equipment as long as good maintenance and support comes along with it. "We predict that, as the market becomes more competitive in a volatile economy, more clients will look to mitigate risk by paying for an asset over one year versus two or three years. Our services will become more invaluable as we provide maintenance services that create the same life expectancy as a premium product," said Paul Cuyler, chairman at Rex. "We believe that through using a combination of historic machine data, oil sampling results, and satellite tracking to inform maintenance we can lower operating costs and extend the longevity of any type of equipment," he added.

Along with the increased presence of Chinese mining companies, several Chinese equipment providers have begun to set up shop and are fighting against the notion that lower cost represents poor quality. Group Thema, the official distributor of Sinotruk, argues that its trucks benefit from the influence of German design, but come at a third of the price of premium European counterparts. "The country's infrastructure challenges are an area where we see potential to assist, and the investment in the necessary construction work can be reduced if DRC leverages access to the less expensive construction equipment available from China. We also see potential to assist in government-led projects through the provision of reasonably priced trucks," said Patrick Thema, director general of the company.

Infrastructure

Transport and Telecommunications

With production ramping up to take advantage of the global mining boom, the poor state of the DRC's transportation network gives reason for concern. Increased volumes of both imports and exports with limited numbers of transporters available has put pressure on the country's already worn roadways. However, dealing with the congestion on the roads represents an opportunity for logistics companies present in the region that can provide innovative solutions to the challenges at hand. "Capacity is a significant problem that will continue to grow, and the company that will make an impact in the logistics space in DRC will be one that is asset based and makes an investment into infrastructure projects, specifically road and rail," said George Ioannou, head of Africa, for the Polytra Group, which recently joined forces with Swiss-based freight-forwarding company Fracht AG. "In the next two years, there will be a shortfall in the capacity of road and, although many are talking about rail, we see little action. The main focus for Polytra is therefore to position ourselves strategically on the five main corridors by taking control of the means to facilitate greater volumes," he added.

Exploring alternative corridors, as well as alternative methods of transportation, are vital exercises that will require capital investment. Roadworks in the Luapula province will support cargo heading to and from ports in the east; Dar es Salaam remains a popular course, and the Tanzania International Container Terminal Services (TICTS) reported a 35.5% increase in the containers handled at port in 2017 following the removal of VAT on transit cargo enacted in 2016. However many of the country's main operators are located in Lualaba, and the Lobito corridor may be a viable solution as developments in the railway connect the DRC and Angola. Nonetheless, the corridor leading south through Zambia remains a critical passage that must be better developed. "There is a significant need for more exit ports like Dilolo or the Kolwezi-Solwezi route. It is very challenging to explain to people outside of the country how the massive

Photo courtesy of Randgold.


KUINUKA
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with AFRICA

Photo courtesy of Ivanhoe.

volume we deal with is being forced through a single border post. The situation has created a real bottleneck and more exit points must be developed," said Jeroen Braet, key account manager at Bolloré.

Even if more exit points can be developed, inadequate management at border posts means that the customs clearings process, already a complicated endeavor, becomes even more tedious — and expensive. "The poor transportation network creates significant impact on the cost of doing business. The mining region in DRC is landlocked, and if a truck has to wait for hours at the border, the DRC loses its competitive advantages to countries like Chile, where the distance from mine to port is a much more manageable," pointed out Eric Kalala, director general for Bolloré DRC.

In response, service providers in the logistics space are become more integrated to provide a one-stop-shop so their mining clients can get more value and focus on their core business activities. "Today it is critical to be able to provide a bundle of services rather than focusing only on transport, clearing, or any of the other services separately. A package that includes door-to-door services is what our clients are looking for, and what Cargo Congo can provide," said Daniel Tyloo, managing director of freight forwarding company Cargo Congo.

While transport remains an obvious point in a discussion on infrastructure, the relationship between telecommunications and mining is less examined, but it is one of increasing importance. Particularly as mines in the DRC begin to embrace the benefits of automation, strong telecommunication infrastructure to establish access to secure and reliable networks will be vital. "Whether operating underground or on the surface, as long the client has access to a strong network, up to three machines can be operated by a single person from a remote bench and there has been a lot of interest in the resulting efficiencies," noted Stephane Goupil, country manager for Epiroc DRC.

Additionally, with many investors coming from all around the globe, it is vital to establish reliable communication channels with outside stakeholders. The vast size of the DRC means that, particularly in the exploration sector, connection can be a challenge. Vodacom, the leading mobile operator in the DRC, earlier this year became the first in the DRC to launch 4G connectivity, and the company also provides an array of corporate services to address the needs of the entire mining value chain. "At all levels of the production channel and, particularly at the research, extraction and processing levels, the industry is highly dependent on connectivity and optimal data management. We offer services and products that improve the connectivity of the mines, however, our capability is beyond fix and mobile services. For example, 'Vodacom Business Solutions' is a platform dedicated to supporting the mining sector's ICT needs through a portfolio of technologies to achieve better productivity and safety, as well as reduce the operational costs for mine sites," said Anaiah Bewa, executive head of corporate affairs for Vodacom Congo.

George Ioannou

Head of Africa, Polytra Group

"Capacity is a significant problem that will continue to grow, and the company that will make an impact in the logistics space in DRC will be one that is asset based and makes an investment into infrastructure projects, specifically road and rail."

Can you briefly outline the strategic focus for Polytra heading into 2019?

We continue to grow on the back of developments in the mining sector, both on freight forwarding as on customs clearing – as such we have recently taken on Glencore as a customer in custom clearance.

Through our continued focus on services, we are targeting growth of at least 30% per year. Capacity is a significant problem that will continue to grow, and the company that will make an impact in the logistics space in DRC will be one that is asset based and makes an investment into infrastructure projects, specifically road and rail.

In the next two years, there will be a shortfall in the capacity of road, and although many are talking about rail, we see little action. The main focus for Polytra is therefore to position ourselves strategically on the five main corridors by taking control of the means to facilitate greater volumes. We strongly believe in the Copperbelt, evidenced by our initiatives to invest through the construction of assets that we wish to operate ourselves. We have been in the DRC since 1974, and our initial strategy was to be asset-lite but today, you have to think out of the box to be successful in the freight-forwarding business and we are committed to demonstrating our commitment to the market.

How are you intending to fund the construction of these assets?

The future of Polytra will rest in the hands of Fracht AG of Switzerland, since Baron Maurice Velge (Polytra's founder) and Mr. Rudolf Reisdorf (Owner and CEO of Fracht group) made a very positive decision in this respect. Fracht AG runs 90 offices present on all continents, employs 1,200 people all over the world, with a strong focus on Africa. Baron Velge opted, that the best solution for his company's future lies within the network of Fracht AG. Polytra's knowledge, digitized set-up, professionalism in the field of 4PL FFWD will be able to deploy its wings all over the world based on a strong network of sister companies.

How important is compliancy to your clients and what steps has Polytra taken to ensure them that you are operating to the highest standards?

We have realized that compliance and ethics are hugely important to our clients, and we have just nominated a global HESEC manager with experience in Africa to review all our processes and positioning in the market in terms of Health and Safety and Ethics. There is a trade-off between achieving complete compliancy and having solutions and capacity. Oftentimes suppliers are not what you wish they would be, but you use them in order to find solutions for the customer. We have implemented a new strategy to help our suppliers grow and move to the next level.

A bottleneck has formed at Kasumbalesa, creating even greater challenges in terms of capacity. How do you see this situation evolving?

Kasumbalesa is a huge challenge because the congestion is a result of poor management at the border. The President is discussing the possibility of a dry port at the site that may help the situation, but in the meantime, it remains a huge frustration for us. Trucks already take 20 days to clear, and when they arrive it takes a further five days to cross. Increasing volumes suggest things will only get worse, which is why rail is a promising alternative because there is much less congestions.

With rising commodity prices and an increasingly complex logistical challenges looming, what is your vision for Polytra?

We are very confident that we are in the right place at the right time, and we want to be part of the growth we foresee in this region. Polytra has been here since the 70s and has had both great moments and suffered through difficult times. We are ready for what is coming, and we believe the current growth is just a scratch on the surface of the potential this country has if there are some positive changes.

Anaiah BEWA

Executive Head of Corporate Affairs, Vodacom Congo

"The link between mining and the telecommunications sector has not yet been widely discussed despite the fact that connectivity is so critical to a modern mining operation."

Can you briefly introduce Vodacom's presence in DRC?

Vodacom is majority owned by Vodafone (64.5%), one of the world's largest communications companies by revenue, and Vodacom Congo is a subsidiary of Vodacom Group, a leading African communications company providing a wide range of services, including mobile and fixed voice, messaging, data, financial, Enterprise IT and converged services to over 103 million customers. Vodacom started operating in the DRC in 2002 as a joint venture that is majority owned (51%) by Vodacom Congo and Congolese Wireless Networks (CWN) holding a 49% stake. Today, Vodacom Congo is an established operator with a 15-year track-record of providing quality communication services in the country. We are the leading mobile operator in the DRC in terms of market share and subscribers.

Can you elaborate on why telecommunications is an important part of the mining value chain in the DRC?

Vodacom collaborates with the mining sector to provide communication services and identify solutions in response to some of the challenges faced by our clients in the mining industry. The link between the country's infrastructure and its ability to benefit from the exploitation of natural resources is quite clear. However, the link between mining and the telecommunications sector has not yet been widely discussed despite the fact that connectivity is so critical to a modern mining operation. Additionally, telecommunication is the second largest contributor to the country's GDP, and therefore plays a significant role in driving the economy of this country. It is important not only to consider how our sector interlinks with mining, but also how both mining and telecom both promote sustainable socio-economic growth in the DRC.

Beyond its support of the mines, how can Vodacom assist the rest of the mining value chain?

Vodacom provides connectivity, management and control solutions that span the entire operational spectrum of this value chain and is ready to collaborate and partner. For example, our car tracking solution allows for optimal fleet management and several possibilities of control including the location of the vehicle, the geolocation of the vehicle on the mobile phone, control and speed limitation, monitoring of consumption, reception of detailed reports, immobilization of the vehicle in case of loss, etc.

Can you highlight a specific service that supports the exploration sector?

To support exploration phases, Vodacom accompanies teams' deployment by linking their quarries to the network by building quick to assemble Rural Coverage Sites to enable voice communication and critical data transmission. As the flow of information increases, Vodacom invests on upgraded 2G sites, depending on the capacity. To date, these connectivity capabilities have allowed the deployment of thousands of tailored sites across the country.

Power

The Congo's great irony

Power typically comprises anywhere from 10-25% of operating costs for a mining operation, and bears particular relevance in the DRC, which suffers from a severe power deficit. As production ramps up, the energy challenges for many miners will only become more acute. For example, the Kinsevere mine's oxide ore is reaching its end-of-life, and while the option to exploit a sulfide option exists, the current plant is incompatible. To construct a new one will be a capital and energy intensive project, requiring a roaster capable of heating over 1,000 degrees to drive out the sulfide. The MMG-owned mine, which expects to produce 80,000 mt of copper cathode in 2018, already imports some of its power supply from Zambia and will undoubtedly need more in the near future.

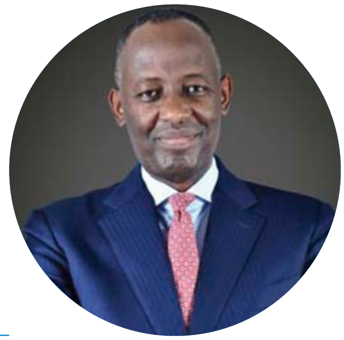
Ironically, the DRC's power potential is so great that it is often said the country could power the entire continent through hydroelectric generation. The Congo river, which is the second longest river in Africa, is the second most powerful river in the world in terms of volume, with an average flow of 40,000 m/minute. It is also the world's deepest river, reaching depths of 220 m, and yet its prospects as a source for electricity have been widely underutilized. The mining province of Lualaba alone boasts hydroelectric potential of around 800 MW, but the dismal state of the country's power infrastructure, coupled with too few generation projects, has resulted in an energy deficit that will only become more pronounced as mines in the region seek to consume more power. "As more mines open in DRC in the coming years, electricity will become even more difficult to source. Additionally, mining is going underground in DRC, and large power plants are required to supply air, water and gas," Axel Chasme, sales manage for BIA Africa, pointed out.

The 2014 liberalization of the power sector in DRC is a first step towards provid-

Photo courtesy of Randgold.

“We are not strong advocates of solar, being an erratic source of power unable to meet customer’s demand on an utility scale basis, even if capacity factors have improved with the use of batteries for storage. We allow ourselves to consider solar only when it can be efficiently combined with hydropower and supply electricity during dry seasons, and are still assessing the merits of such a solution in DRC.”

John Kanyoni, COO, Tembo Power DRC



ing an alternative to SNEL, the country’s state power company, and the rules of play will be better understood once the the Autorité de Régulation de l’Electricité (ARE) is firmly established. However, the Grand Inga Dam, a multi-phase project that could eventually deliver as much as 40,000 MW, has served as a deterrent for those that might consider investing into the DRC’s power potential because once Phase III becomes operational in 5-6 years, it will be impossible to beat the economies of scale achieved by this mega project. “The electricity generated by small hydroelectric dams will be slightly more expensive than that generated by Inga…. [which] will sell at four US cents/kWh to five US cents/kWh, while all the small generation plants will be between 12 US cents/kWh and 15 US cents/kWh,” said Vincent Noel Vika di Panzu, director general of Katanga Energy, adding, “However, to ensure system stability, we also need a power plant in Katanga because, if Inga’s power supply fails, we will need the support. Therefore, projects like Busanga, Sombue, Lubudi and Lwapula are very welcome to stabilize the system. We cannot rely only on Inga, especially as it is 2,000km from Katanga.”

John Kanyoni, COO of Tembo Power in the DRC, elaborated further on the reasons that investment into power-related projects has been sluggish: “The addition of power generation capacity in DRC is challenging because of the Governments’ budgetary constraints, the lack of transmission infrastructures, the accessibility of viable sites, and the difficulty to finance projects, whether on a corporate or project finance basis. Power demand is closely related to the mining sector and the reason for lack of investment is the volatility of the commodity prices. During the downturn, caused by a fall in demand from China, people were more pessimistic about the soundness of our initiative, but today opinions are much more favorable.”

Out of necessity, many mining companies have been active in investing into the rehabilitation of existing infrastructure, either through internal departments like Ivanhoe’s Kamoa Energy, or with the support of companies like Congo Energy, a member of the Forrest Group. “Some parties like Tenke Fungurume (TFM) will need huge amounts of power to take advantage of the rising copper price — the company will need 400 MW to produce their desired 300,000 to 400,000 mt/y of copper. They have the resources but not the power, so they were looking at the Luapula valley at the Zambian border to the east where there is potential for hydro-stations on the DRC side of the valley,” said Tobias Posel, director at GeoQuest.

Zambia based Copperbelt Energy Corporation (CEC) operates the interconnector between the DRC and Zambia, and has been selling power to companies including MMG and TFM. Katanga Energy, which is also working to rehabilitate substations in support of the mines, is importing power from Pointe-Noire in Congo-Brazzaville. The Italian oil company ENI gas power plant has a capacity of 300 MW with an excess of 120 MW, which Katanga Energy is re-selling to mining companies. Additionally, several new generation projects have begun to move forward in the small-to-medium size range. Tembo Power, which has an 80 MW project in Kenya, is also conducting feasibility studies for a project on the Kalule River with an installed capacity of around 70 MW. Kipay Energy, whose CEO Eric Monga is also the provincial president of FEC, is working on the Sombwe and Kawa hydroelectric projects which have combined potential to generate around 160 MW.

There is also a growing interest for the benefits afforded by investing in solar-powered solutions. While no solar projects in the country currently achieve the scale to power a large scale mining operation, the technology is being used to power offices such as the new Luano City complex in Lubumbashi, which serves as the headquarters for several prominent companies such as CNCM and TFM. Jean Baptiste Kasokota Kibambo, technical and commercial director of PANACO, elaborated on the opportunity to support mines in other ways such as their CSR projects: “The distribution of electricity by the state power company SNEL is insufficient, and in places like hospitals, schools, workers’ camp, and villages we see significant opportunity for mines to step in through investments in solar energy. We have developed a solar energy package for the mines with this in mind, with the objective of helping mines achieve their social responsibility obligations,” he said.

“Solar is an expensive option, but we believe the most important thing is education. We are trying to communicate to clients that within 5-10 years, the investment made into a solar project will be earned back allowing the benefit of producing free energy.”

Jean Baptiste Kasokota Kibambo, Technical and Commercial Director, PANACO

Dev Solaire, another local provider of solar solutions, is looking to extend its offerings in renewables by exploring opportunities in biofuel. “In DRC and particularly Lubumbashi, solar and biomass are the two most viable ways to produce electricity when compared to wind or other sources. These options are more cost effective, and the region’s abundance of sunshine makes it an excellent candidate for solar solutions. Biofuel essentially uses waste to produce electricity, and we are working with Haier, a world leader in this space, to explore the potential,” said Divesh Hassamal, managing director of the company.

Using solar and other sources of energy can help reduce consumption from the grid, but there are efficiencies to be gained in daily operations that can also help considerably. Minequip, a distributor in the region for several brands including Atlas Copco, also installs automatic lubrication systems for equipment. “Our systems allow companies to reduce that deficit by saving power, but we must emphasize to the end users how every kilowatt saved is important. For instance, our lubrication systems for open gears and crushers reduce the friction between the components, which is turn reduces power consumption because when there is less friction, there is less waste,” said Adry Nzonzimbu, director of the company.

Ultimately, optimization of operations will not be sufficient to account for the coming drought in power if success in new generation and rehabilitation of aging infrastructure do not occur. One way or another, capital invested by the mines themselves will likely prove necessary to move the country forward.

Conclusion

Developing Human Capital

In addition to addressing the controversial topic of taxation, the new mining code also attempts to promote greater participation of the Congolese in the nation's mining industry. Doing so would help to create a more sustainable mining ecosystem and allow the country to derive more wealth from its resources, but the key problem remains the lack of a qualified labor force to service the industry. Nonetheless, there are certainly longer term benefits if the DRC's human capital is indeed enhanced. "We hope the new rules will mean DRC providers step-up and ensure they have the correct skills. The new rule imposes competence transfers so service providers from abroad will need to make partnerships with Congolese companies," said Djo Moupondo, CEO of Sodeico Development, a Congolese HR management company established in 1987 that provides a diverse range of services from recruitment to medical care management. "This is a significant benefit of the rule but it is also potentially problematic as service providers may go into partnerships very quickly without doing due diligence. Due to our experience and connections, we know most of the supply chain and we can point companies and investors (individuals and companies) in the right direction to find the best partnerships."

Sodeico is leading an initiative to develop an academy devoted to four different industrial sectors, including a mining and energy division based in Lubumbashi. The company aims to work with private companies through endorsements of specific courses, with the objective of pairing top students with mentorships, internships, and eventually jobs. While initiatives like this are undoubtedly a good start, improving the country's state educational platforms will also be key if the new subcontracting law is to be fully enacted. "Without better education, it will be difficult to move forward and we need better schools and higher level universities to accomplish that," said Costas Coursaris, founder of Katanga Business Meeting (KBM), a relatively new event that endeavors to bring together players across multiple industries to promote the DRC's economic potential

A large part of the problem stems from poor educational infrastructure and the consequences of "brain-drain", but the generational gap that impacts the mining community worldwide has also likely impacted the lack of available talent in-country. Similarly to anywhere else in the world, jobs in IT can seem much more attractive to a young student despite the opportunity being promoted by the new subcontracting regulations. "Today it is difficult to find qualified technical people. Many of the schools here in DRC provide education that is not as focused on the technical side, but rather IT. We need more people more competent in a more traditional technical skillset. Today it has become more challenging to find qualified laborers," said Pythagore Manoliadis, managing partner at Benco Construction. While enhancing the educational opportunities in the DRC can only help the country's mining sector to become more stable, the new legal requirements about the involvement of Congolese remain unclear for the time being. "It is true that the reform of the new mining code aims to advance Congolese companies, but the wording of the law is unclear. There was a subcontracting law which came into effect in March 2018, which has already encouraged subcontracting reserved exclusively for Congolese people, but the wording contradicts itself on many aspects, and so the mining industry does not have a clear idea of what it really means to have a Congolese majority workforce," explained Lysa Munkeni, managing partner at ACF Conseil, a Congolese tax advisory firm.

A topical discussion for many mining companies around the world is the notion of CSR and the responsibility a private entity has towards the communities where it operates. Increasingly, and particularly in the developing world, the mining community is realizing that beyond just being an obligation, CSR serves as a tool to secure the social license to operate while also contributing to the sustainable growth of the countries where it operates. Expat labor is expensive, and if CSR programs that emphasize education and business practices that facilitate knowledge transfer are better implemented in the DRC, mining companies will ultimately improve their bottom lines and help the DRC finally begin its ascent to greatness.

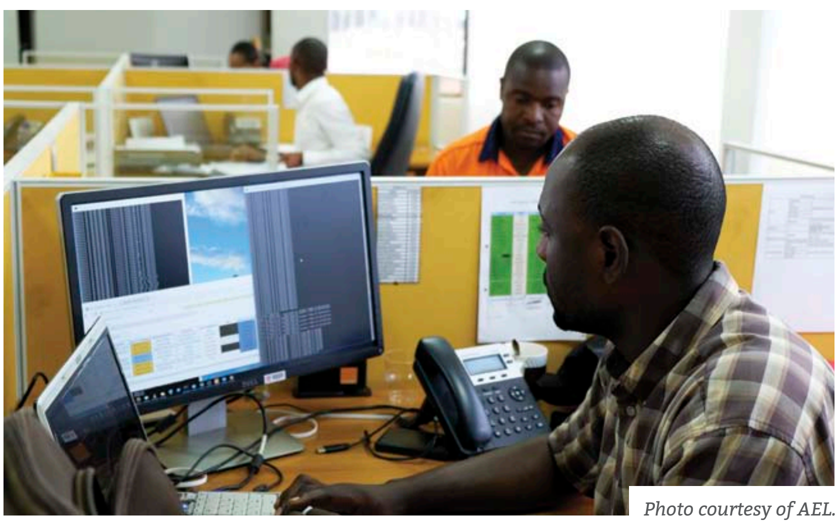


Photo courtesy of AEL.

Costas Coursaris

"The annual Katanga Business Meeting brings the mining community and related sectors of DRC together."

Founder, Katanga Business Meeting (KBM)

Can you briefly introduce KBM and highlight the objective of the event?

KBM is one of the largest events in the Copperbelt region and the DRC, with a record high of 170 exhibitors and 4,000 visitors in 2015. While this year attendance dropped to 130 exhibitors and around 2,300 visitors, we are now focusing on bringing people from different sectors together to create greater impact. Mining has remained the heart of the economy for many years, however it is critical that the DRC develop other sectors such as agriculture, tourism and transport. We represent nine major sectors and provide these players with a platform to raise awareness about their activities. We anticipate that in the future, more countries will participate in the exhibition to help grow the underdeveloped sectors in DRC.

What are the advantages for a mining company that participates in the KBM event?

Mining companies in DRC will not find buyers in an exhibition, but through the new law requiring the mines to rely more on Congolese subcontractors and reduce imports, there is a need for a space for all of these entities to engage and learn about one another. The strategy of KBM is to put together not just mining suppliers, but also other sectors that in-directly impact the mining houses such as agriculture and tourism. Secondly, conferences play a key role in facilitating conversation about the changes occurring in the industry and promote transparent dialogue on topics such as how the new mining code will be applied.

In your opinion, what is the missing ingredient that will help to strengthen the business ecosystem here in DRC?

Without better education, it will be difficult to move forward and we need better schools and higher level universities to accomplish that. Additionally, we need to develop better local facilities for Congolese living abroad due to economic and security reasons. Promoting peace and justice will also be key, and overcoming the corruption issue that the country faces is also important for improving the business environment here. Regarding the local subcontractors, if better education and justice systems are achieved in combination with a crackdown on corruption, the entire supply chain will benefit.

What challenges do you see for investments into the power sector here in DRC?

These projects are challenging and they require significant time and large budgets to be successful. DRC is also home to the Inga Dam project which, step by step, is moving forward, although after the involvement of many external investors it is clear that the project faces an unclear and difficult development path. Nonetheless, in the next five years, I believe we will see improvements in the energy sector. The problem remains that consumption of energy will only continue to rise with increased production capacity. To meet all the industrial needs for this country's development, the government will need to invest more heavily in power-related projects and find more partners.

How do you expect editions of KBM will evolve in the future?

In the beginning, exhibitions were our strength and hosting the conference was our weakness, and this year our focus was to bring better speakers on board and generally enhance the conference element. Next year, we aim to streamline both and potentially bring the event to Kolwezi. Although Kolwezi makes sense as a venue site because that is where the mines are, the availability of hotels and accommodation in Kolwezi presents some limitations. His excellency the Governor of Lualaba is making incredible efforts to develop the infrastructure and, if we have a welcoming environment for all these actors, we certainly will take advantage of the opportunity.

What final message would you send about the opportunities to invest in DRC to our readers?

DRC faces significant challenges in comparison to many other countries on the continent, but I believe for Africa to realize its full potential, solving the social, economic, and political problems in DRC should be a priority. Our country is the heart of Africa and once we get on track, the result will benefit the entire continent. Currently, the DRC is focused on its relationship with the southern region and not putting enough emphasis on engaging with countries to the north, west and east. Countries like Morocco, Nigeria, Ivory Coast, and Kenya could help to bring solutions to develop our sectors. To all investors, I would recommend not to wait for the election, but come beforehand to gain a clear view of the opportunities in our country.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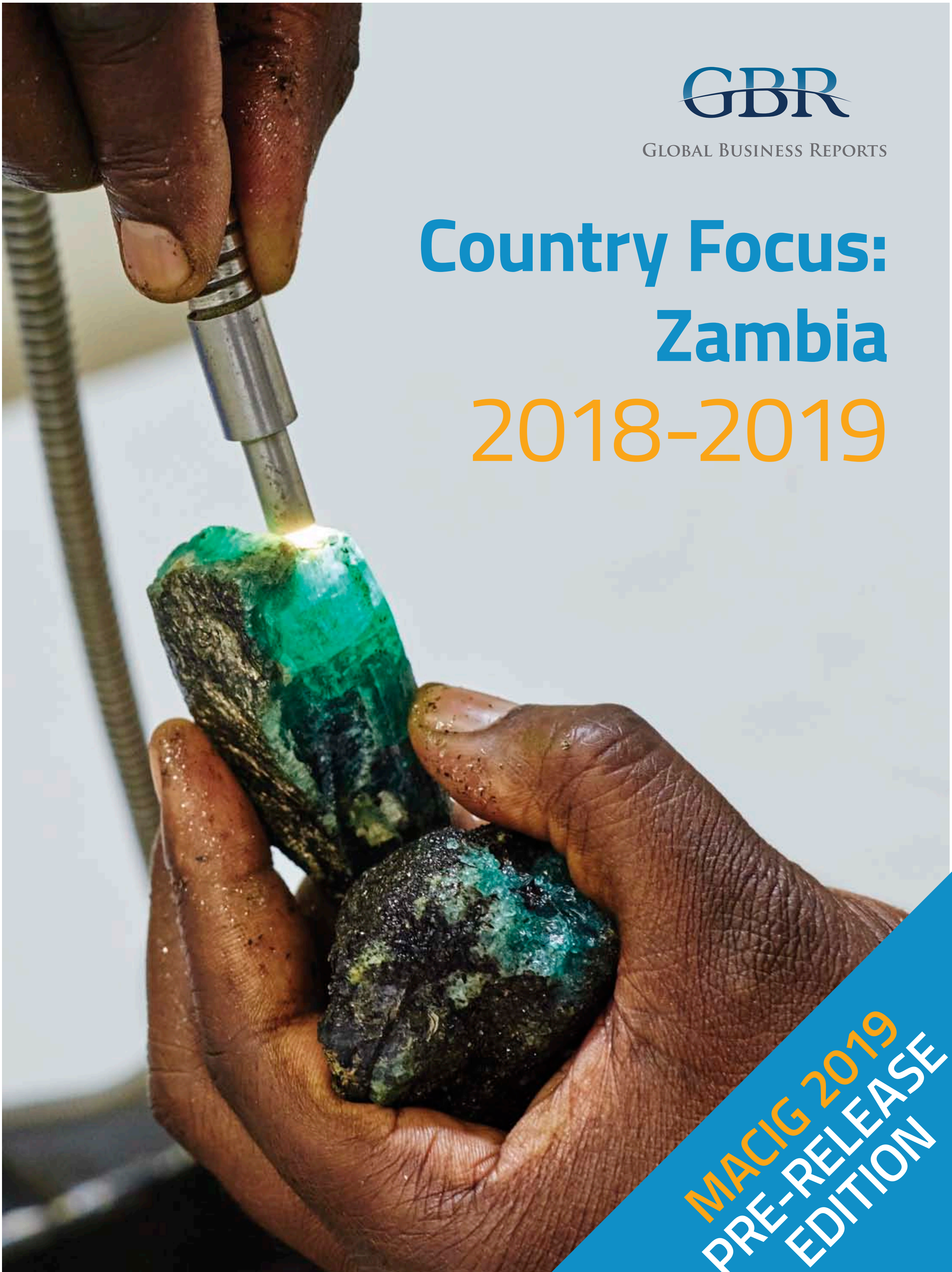

GBR

Global Business Reports

Country Focus: Zambia

2018-2019

MACIG 2019
PRE-RELEASE
EDITION

for Leisure and Business

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Dear Readers,

The Central African Copperbelt hosts some of the most important copper reserves in the world. Boasting grades as high as 4%, the sediment-hosted style deposits are estimated to contain around 5 billion tonnes of copper ore, and around 40% of the planet's cobalt reserves can also be found in the region. This 450 km stretch of mineral-rich land falls almost entirely between two African nations — the Democratic Republic of the Congo (DRC) and Zambia — which unsurprisingly represent the first and second largest producers of copper on the continent, respectively. As the commodity cycle wheels back into a boom phase, the price of copper has recovered substantially and cobalt prices have soared to historic heights.

In the first pre-release for one of our cornerstone productions, the Mining in Africa Country Investment Guide (MACIG), GBR dives into the key factors that will either inhibit or encourage investment flows into these two Kings of Copper. Although they both claim a share of the Copperbelt, the opportunities and challenges of investing in these neighboring countries diverge entirely from one side of the border to the next.

Zambia, long considered one of the most stable and peaceful nations in Africa, does not offer the high grades nor the same potential for cobalt found in the DRC. Conversely, while the mineral potential in the DRC is unmatched perhaps even globally, ongoing conflict and an uncertain political environment are simply unpalatable for the risk averse investor. The lingering impact of the copper downturn has depressed the services sector in both regions, but the recent upswing is breathing new life into the mining ecosystem. In the DRC, a new mining code has been met with loud rebuttals from many prominent international investors, and companies are adjusting to the new regulatory framework as an impending election contributes to a heightened sense of unease. Zambia continues to attract the attention of investors eager to tap into its well-established mining tradition, but diversification into other minerals will be critical for the continued success of the country's mining industry. The sharp eye will notice that the cover image for these reports is not copper; the Kagem emerald mine in Zambia and the Kibali gold mine in DRC demonstrate that while these countries' mining industries may be defined by copper, excellent prospects in other resources warrant greater attention.

In the pages that follow, we share with you some of the developments occurring in both jurisdictions ahead of our final MACIG 2019 report, to be released in February 2019 at the Mining Indaba in Cape Town, South Africa. We extend our deep gratitude to all of the industry leaders that took the time to share their valuable insights with us, and we present our preliminary analysis of both countries on the basis of their experiences. As 2019 approaches, we will continue our research across the continent and readers can look forward to our second pre-release focused on the West Africa region later this year. To all our readers, we always welcome your feedback or interest in being interviewed; please feel free to contact me at ldavis@gbreports.com.

Enjoy the read!

Lindsay Davis, *Project Director and Journalist*
Lina Jafari, *Project Coordinator*
Emma Johannes, *Project Coordinator*



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Country Focus: Zambia

MACIG 2019 Pre-release

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Global Business Reports

This research has been conducted by Lindsay Davis, Lina Jafari and Emma Johannes.

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Mining in Zambia

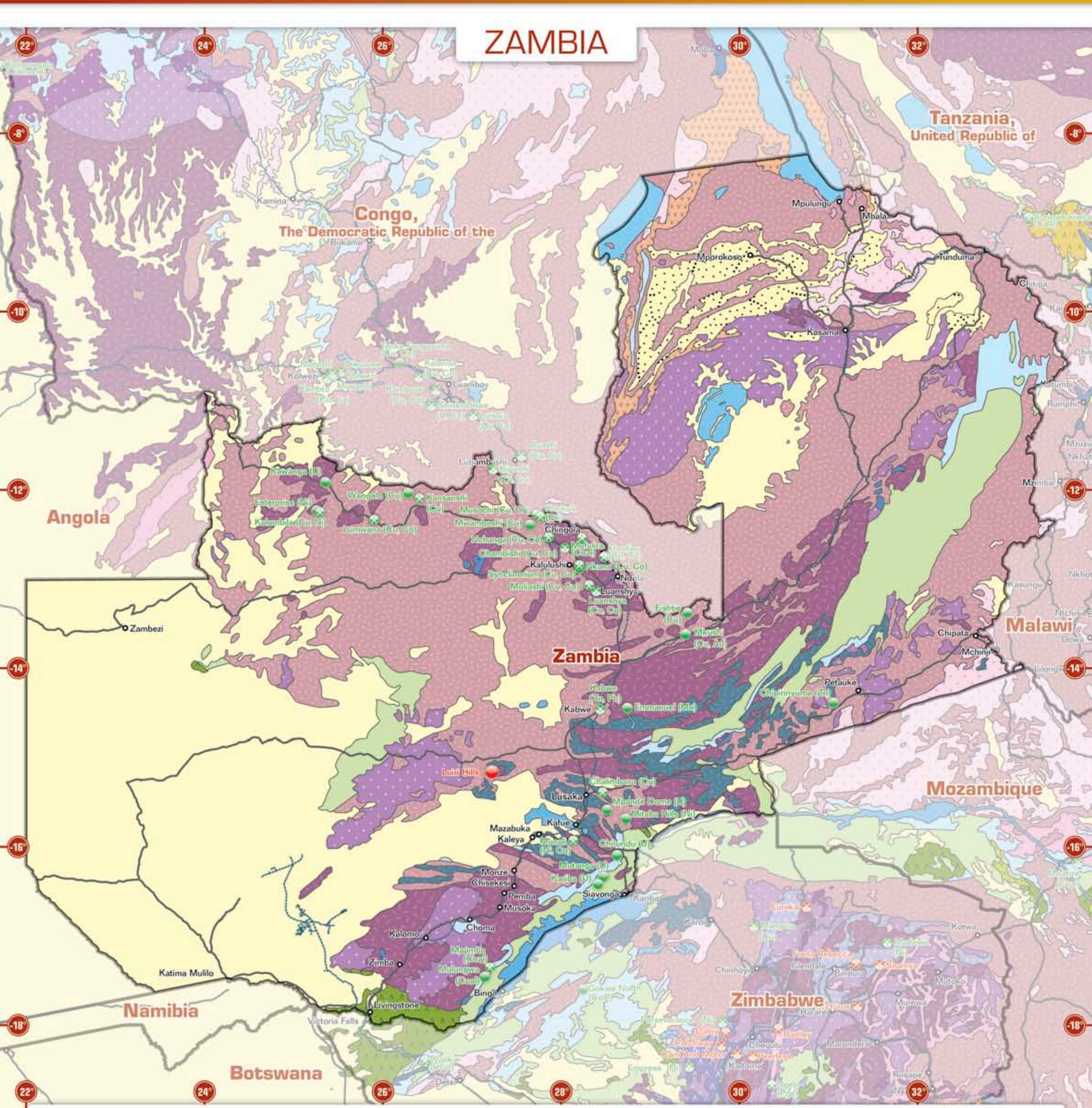
Diversification will drive success

Photo courtesy of Gemsfield.

Zambia has long been considered on of the most attractive destinations for mining investment in Africa given its association with peace, relative political stability and a long tradition in mining. However, Zambia's mining industry is aging and insufficient exploration suggests that new opportunities are limited. The downturn in the copper price hit contractors hard and, despite the recent upswing, all boats are not rising and cash flow remains tight. Notably, and in a scenario reminiscent of Tanzania's dispute with Acacia Mining, First Quantum Minerals (FQM), which produces over half of the country's total copper, was slapped with a US$7.9 billion tax bill when the Zambian government claimed the company was incorrectly reporting exports. The Vancouver-based company has staunchly refuted the charges and, although negotiations are ongoing, it has been rumored FQM will pay around US$1 billion to settle the matter. Zambia's worrying level of debt which could rise to as high as US$13 billion by 2019 could also signal to some investors a potential change in the tax regime given residual mistrust brought on by unpredictable changes in recent years in the typically predictable nation.

Yet, there are many reasons to remain deeply interested in Zambia's mining industry. The country produced 800,0000 mt/y of copper in 2017, and the government's ambitious target to produce 1,000,000 mt/y in 2018 is on track to succeed. The North-West province is being hailed as the "new Copperbelt" and, although still sluggish, exploration initiatives in and around the region are buzzing. Zambia is also proving that its strengths are not just in copper, but an array of other minerals and notably its emeralds are contributing to the development of a more resilient industry that does not live and die by the price of copper. The entire industry previously suffered from severe power shortages that crippled the mines' ability to produce in 2015 and 2016, but Zambia is now on track to become a net exporter of power — though the debate around energy tariffs will undoubtedly persist. Finally, despite evidence of tension between the public and private sector, the country remains a relative safe haven for investment dollars. "Over the past year, we have definitely witnessed positive trends and the order intake picked up significantly last year. We have been hearing from our customers that the projects that were on standby and in care and maintenance are coming back into production," said Patrick Chanda, country manager of Epiroc Zambia. "Everyone is ramping up and there is a very optimistic feeling, even taking into consideration challenging external factors. We expect this to continue in the coming years."

ZAMBIA



GOLD MINES
- Existing
- Gold resources
- Closed

OTHER MINERALS
- Existing mines
- Projects
- Closed mines

- Geological boundary certain
- Country Borders
- Roads
- Railway
- Water area

CENOZOIC	MESOZOIC	PALEOZOIC	PROTEROZOIC	ARCHEAN
Sediment	Sediment	Sediment	Sediment	Volcanic felsic
Volcanic felsic	Volcanic felsic	Quartzite	Quartzite	Volcanic mafic
Volcanic mafic	Volcanic mafic	Volcanic felsic	Volcanic felsic	Plutonic felsic
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Plutonic mafic	Plutonic mafic	Plutonic felsic	Plutonic felsic	Metamorphic
	Metamorphic	Plutonic mafic	Plutonic mafic	Amphibolite
		Metamorphic	Metamorphic	
			Amphibolite	

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0 50 100 150 200 KILOMETERS

GEOLOGICAL DATA: BRGM - LAT/LONG WGS84
Mine location data: www.mining-atlas.com
Map drafted: Kwaku Owusu-Ansah
Graphic design: www.arcildesign.com

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PRODUCTION/EXPLORATION

Production of copper is largely driven by four standout players: FQM, Mopani Copper Mines, Konkola Copper Mines (KCM), and Barrick's Lumwana. FQM, despite its troubles with the government and a "pivot" towards Latin America, where the company's Cobra project in Panama will come online in 2019, insists it remains committed to Zambia as well. "We firmly believe that Zambia has every prospect of reclaiming its place as the number one copper producer in Africa," said John Gladston, government affairs manager for the company. "The principles that will underpin this are stability and competitiveness, but not just in terms of the mining tax regime. Things like electricity tariffs, the ability to issue employment permits to limited numbers of critical expat workers, and access to a competitive market for consumables such as low-sulfur gas-oil — of which we consume around 500,000 liters a day — are of great influence to Zambia's attractiveness," continued Gladston.

MCM will seek to produce 175,000 mt in 2018, following an aggressive expansion project that involved sinking several new shafts - an investment to the tune of US$1.5 billion. KCM experienced a recent shuffling in leadership and the Vedanta-owned company's new CEO, Deshnee Naidoo, has recently announced an initiative to push production up to 400 mt/d, with production in June sitting at 350 mt/d. The Lubambe mine, which previously formed part of the historical Konkola copper mining complex, was purchased by EMR in December 2017. "In the past six months that we have been here, we have identified that the mine is not particularly productive firstly because it has insufficient infrastructure to handle the volumes of water in the area and secondly because the mining method used has not been the best one for the type of ore body," said Nick Bowen, CEO of Lubambe.

Globally, there is a deficiency in exploration capital and Zambia is no exception. Particularly in the recent downturn, large mining houses have been hesitant to take part in endeavors that do not deliver a return to anxious shareholders, but, as resources deplete, there is a risk that the global pipeline for projects will reach a crisis. That being said, there is significant opportunity for those that can demonstrate a successful venture. Midnight Sun, which is focused on discovering copper and cobalt in Zambia, has a land package of over 500 square kilometers near FQM's Kansanshi mining complex that it has been exploring since 2015. "There are so few new discoveries these days that to have a potential deposit that can illustrate the size and scale of a large scale operation is quite exceptional," said the company's CEO, Brett Richards.

So far Midnight Sun has drilled in excess of 40,000 meters and made a discovery on the Mitu target of 4.23% Cu eq, including cobalt credits, at over 11.6 m, at 120 m depth, and on its northern target known as 22 Zone, where the company hit intercepts of 5.71% Cu. over 11.2 m, within 120 m of surface, trending over a distance of 1,000 m. "The exploration program for 2018 was to isolate the key target of Mitu and try to drill (air core and diamond) the near surface mineralization (250m depth) to better understand the geological complexities of a target that extends over 17 km in strike. We also conducted a Versatile Time Domain Electromagnetic ("VTEM") geophysical survey over the

John Gladston

Government Affairs Manager, FQM

The government is looking to diversify across several different industries. How does FQM support this initiative?

Our multi-facility economic zones (MFEZ) Kalumbila and, hopefully in due course, Kabitaka will speak to all those aspects of the government's desire to diversify industry in the country. More than that, these initiatives will generate jobs and tax payments that will become government revenue, increasing the general wealth of the nation. I am optimistic that the government will show courage and endorse those commercial zones. Where we have sited them, we have also constructed a town next to each MFEZ that will help to support their success by providing a stable supply of workers. All these initiatives are geared towards creating sustainable communities around our mines so that when the orebody expires, the community there will persist; at the end-of-life of each mine we do not want to see any community collapse in on itself.

How has the power conversation evolved in Zambia since the crippling deficit that severely impacted the mining industry a few years ago?

Power is such a critical component to a successful business, which again plays into the tariff debate and subsequent competitiveness of Zambia as an investment destination. Looking forward, we believe that competitiveness should be embodied in a cost-reflective electricity tariff. The only way to determine a cost-effective tariff is to carry out an independent cost of service study; this independent study is yet to be delivered. Clearly any cost reflective tariff will be heavily influenced downwards by the reform of the Zambian electricity utility ZESCO. In the meantime, we will continue our dialogue with government, but we must also make allowance for existing power agreements.

Can you provide an update on the strategy in place for the Enterprise nickel project?

The nickel price is recovering, but we have not yet seen the stability nor the price-point which warrants the commissioning this project. This is also the case for our nickel asset in Australia, which remains under care and maintenance. In the meantime, we are still exploiting the synergies available at Enterprise with respect to the Sentinel project.

"Often in Africa, because the actual cost of labour is so low, there is little investment in staff training and management and they are not treated as the valuable resources they can be. We have already increased staff productivity by 25% by bringing in productivity bonuses and other performance related financial incentives. We will continue to increase this productivity without increasing staff numbers by investing in training and logistics, and using our staff better."

Nick Bowen, CEO, Lubambe Mine

"Zambia's strategic advantage is the fact that the gemstones are located here. In India, where much of the cutting and polishing takes place, the strategic advantage is the low cost of labor. We have seen many companies try and fail to implement these processes in Zambia, and if it were a profitable business we would certainly be taking advantage. However, the reality is that Zambia must play to its strengths in extraction of these resources."

Sean Gilbertson, CEO, Gemfields

property on 200 m centers, but 100 m centers over the targets, and expect the results of this work will illustrate the size and scale of a multi-faceted deposition that will potentially host a large mining operation," said Richards.

Notwithstanding its potential to further understand its copper and cobalt potential, to push Zambia's mining industry forward diversification into other minerals will be key. While prices have not been attractive enough to warrant intense exploration, GoviEx's Mutanga project, which consists of five main deposits, suggests the country's potential in uranium, and increased activity in small-scale mining of manganese has also been garnering attention. "Manganese is a key commodity at the moment," confirmed Seamus McKenna, operations manager at Paul McKenna & Sons, a diversified mining company that provides mineral and materials processing as well as transport services. "We have invested approximately US$1 million into our manganese project and we expect we will need to put in more capital to achieve our desired production rate of 3,500 mt/d," he added.

Interestingly, whispers of lithium potential have also recently begun to spread. "We are seeing particular interest in lithium, driven by Europe's demand to move away from a reliance on traditional fuel and power solutions and more into batteries. The potential is particularly high in the southern part of Mozambique and Zambia, and we are expecting a significant increase in the development of lithium mines within the next one to two years," said Patrick Kampenegele, managing director of Knight Piésold Zambia. "This translates into a lot of opportunities for us, because developing these mines is essentially the equivalent of building the infrastructure of a new town, with requirements like roads and ensuring water accessibility,"

Zambia's copper credentials suggest that the country would also offer opportunities in gold given that the two metals often occur in the same mineral deposits. However, the challenge of gold mining in the country is a technical one related to its topography: "The problem with finding gold in Zambia is the lack of relief. The more mountainous or hilly a country is, the easier it is to find gold because it ends up in stream networks where it concentrates and it can be sifted out," explained Mark Shaw, consultant geologist at GeoQuest. "Because Zambia has a very flat landscape and a lack of small streams and rivers, gold exploration is much more difficult. The alternative solution, which would be soil sampling, is not always very effective because there is a very thick overburden cover which has accumulated for the last six million years when the last major change in climate occurred in southern Africa."

Precious and semiprecious gemstones are also an area where Zambia has excellent prospects that have strengthened in recent years. In particular, the country's emeralds have gained traction on international markets, sought after for their characteristic blue undertones. London-based Gemifelds operates the Kagem mine, which represents the world's single largest producer of emeralds, accounting for about 25% of global production. The company's CEO, Sean Gilbertson, highlights the role that consistent supply plays in establishing the value of a gemstone. "We have built Gemfields around the idea that the colored gemstone business had been overlooked and was very fragmented. We saw an opportunity to professionalize the industry similar to what De Beers did with diamonds. Emeralds, rubies and sapphires never made it into the mainstream in the same way as diamonds because of a lack of consistent or reliable supply," he said, adding, "Because these types of deposits are very pocketed, there is an uncertainty to what extent they can provide resources, making it difficult for the industry to run properly. Our strategy centers around finding solutions that enable us to deliver a consistent supply of these gemstones."

Gemfelds also holds a 50% interest in the Kariba amethyst mine in the southern part of Zambia that the company is looking to sell in order to focus exclusively on emeralds, rubies and sapphires. While

Gemfields has operations worldwide, Gilbertson expects the African continent will be a key area of emphasis for the company going forward.

Near the Kagem mine, the Gemcanton emerald mine is also ramping up its production capacity. "Our future strategy involves acquiring more machines and excavators to help unlock the potential in certain mining areas that reach depths of around 120 meters. We are also engaged in further drilling and exploration activities throughout the country in both emeralds and copper. We are also looking to invest in scanning technology that provides information about what the ground contains 100 meters below the surface to better understand the potential in our ground," said Abdoulaye Ndiaye, CEO of Gemcanton.

CONCLUSION

Around the globe the mining industry is experiencing a lift, and Zambia is no different. If the country can attract a fresh round of investment to boost existing projects and unearth new ones, the boundless opportunities in this overall stable environment will inevitably drive the country back to its rightful place as a leader among Africa's top mining destinations. However, Zambia is notable not just for its mineral opportunities, but its strategic position connecting the southern Africa region. The transport sector often quips the country is not land-locked, but rather land-linked, highlighting the fact that Zambia's borders with eight different African countries allows it to facilitate vital trade. Furthermore, the country's participation in both the Southern African Development Community (SADC) and the Common Market for East and Southern Africa (COMESA) means that goods can be imported and exported between member countries without paying duties.

Critically, the country must improve its transportation infrastructure if it is to recognize the full extent of this opportunity, especially as its neighbor to the north also ramps up copper production and looks to utilize the existing corridors to the south. While the Southern Africa region overall boasts a much stronger transport network relative to other regions around the continent, railway is the essential next step to alleviate its overworked road system. Reiner Barford, group managing director for Manica, emphasized: "While cargo has traditionally been moved out of the Copperbelt by road, many logistics companies are looking to invest in rail as it is far more efficient. We have agreements with train companies so that we can run containers straight from Zambia into Durban, which is the most secure mode of transportation. It is also more cost-effective and more environmentally sustainable, as well as quicker and less damaging to the infrastructure."

If a railway option can be implemented and better synergies can be achieved between the region's free trade areas such as COMESA, Zambia is well-positioned to service not just its own strengthening mining industry, but those around it as well.

Photo courtesy of FQM.