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South Africa's need to revive mining exploration

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According to Minerals Council South Africa CEO, Mzila Mthenjane, in an op-ed published in October, the country's mining exploration spend in 2023 was 0.8 percent of global spend, down from over five percent two decades ago. In 2019, Minerals and Energy minister Gwede Mantashe set the goal of reinvigorating minerals exploration and development and getting back to the five percent mark. But his department is still sitting with the now entrenched problems of a (5 000+ application) backlog in processing permits and a lack of publicly-available information about who possesses what rights over which areas.

One of the implications is that there is little information about which critical minerals, needed for the global energy transition, are to be found in South Africa. The World Bank has forecast an increase in demand for critical minerals – including copper, cobalt, lithium, nickel, manganese and graphite – of up to 500 percent by 2050. The Bank says that this will require the construction of up to 400 new mines globally and US$1.7 trillion in new mining investment.

South Africa is simply not on the radar screens of potential investors in this 'new gold rush'. There has been virtually no green fields mining exploration in the country for 30 years; the exploration that does happen is overwhelmingly focused on expanding existing operations especially in the platinum sector. The small number of future minerals projects launched in South Africa in recent years are largely redevelopments of resources that have been known about for decades.

South Africa's most recently listed junior miner (April 2023), Copper 360, is developing copper operations near Springbok in the Northern Cape. Another junior mining company, Australia-listed Orion Minerals – best known for its revitalization of the Prieska zinc and copper mine – has purchased and intends reviving the Okiep copper mine. It's CEO has suggested that Prieska and Okiep together could produce 40-60 000 tonnes per year.

While local mine level discoveries and new ways of extracting and processing ore are being used in the Northern Cape, the existence of copper deposits in the Okiep/Springbok area is hardly news. The knowledge goes back at least to 1685 when then governor of the Cape Colony, Simon van der Stel led a prospecting expedition to the area. Mines in the area had produced 200 million tonnes of cooper over 150 years before operations were closed in the 1990s and early 2000.

The same pattern can be observed for other critical minerals. The Steenkampskraal deposit north of Vanrynsdorp in the Western Cape contains all 15 rare earths in significant concentrations. But it is also not a new discovery. The underground mine was operated by Anglo-American from 1952 to 1963.

Part of the problem is the department's extremely slow procurement of a mining cadastre. The SAMRAD system, purchased in 2011, has proven a failure and attempts to replace it have repeated floundered. Some critics, like the Democratic Alliance's shadow minister for mining, James Lorrimer, suggest the failure is deliberate. Lorrimer's argument is that a new cadastre would reveal issues, some related to corruption, that many would like to see remain hidden. South Africa still uses a paper-based system while almost every other major jurisdiction in Africa has a publicly-accessible on-line system.

However, the cadastre issue is only the tip of the iceberg. Aside from well-known overarching national issues like energy security and the logistics crisis, the South African jurisdiction has other problems which hold back exploration.

Exploration is overwhelming the preserve of junior mining companies. These are highly specialized firms which find, prove and (sometimes) engage in early development before selling on to a major company which will actually operate the mine. Juniors account for roughly two-thirds of all discoveries. But the Johannesburg Stock Exchange has 12 listed junior miners by contrast with the Toronto Stock Exchange with 1 200 and Sydney with over 500.

These markets and Toronto especially, is where explorers go to raise capital. Canada has a flow-through tax deduction scheme which allows investors a 100 percent tax write-off for capital invested in mining exploration. South Africa tried to introduce something similar with the now discontinued (in 2021) Section 12 J of the Income Tax Act, introduced in 2009. The clause was expected to boost mining exploration. In the event however almost all investors chose to put their money into student accommodation and shopping centres. Mining exploration is an extremely high-risk game, with the vast majority (some observers say 99 percent) of ventures failing.

However, in booming exploration jurisdictions, failed exploration projects are valuable. Significant discoveries are often made as a result of a second look at older data. This is precisely what has happened in the South African copper, zinc and rare earths examples above. This accumulation of data, negative as well as positive, is part of a jurisdiction's patrimony and is why it takes decades to build up an industry. All exploration results need to be curated and publicly available.

In South Africa, this is the role of the Council for Geoscience. However that institution needs to have exploration data fed to it by the Department of Mineral Affairs which has failed, for years, to do so. The South African regulator has been unable to give even a global figure for exploration spend let alone such figures as exploration metres drilled for each commodity. Such data is standard in Canada, where it is curated by the Provicial and Territorial Geological Surveys.

Finally, the impasse over the permit backlog hides another problem. South African exploration permits do not change hands but tend to sit with the recipient, sometimes for many years. It is said that some prospecting rights have been held for eighteen years without any activity, while some mining rights are held for up to nine years in defiance of the law which requires operations to start within 12 months of right being awarded. In Canada and Australia, by contrast, exploration permits expire after two years. That creates a sense of urgency which is one of features of these vibrant exploration jurisdictions.

In the opinion of the MCSA's Mthenjane, mining offers the South African economy a chance to kick-start itself out of its present low growth malaise. But the sector has experienced an average contraction of -0.3 percent per year since 1994. Mthenjane argues that new technologies and the emergence of critical minerals offer a chance for the jurisdiction to 'hit the reset button'. But this won't happen unless there is a revival of exploration.