

Mapping Mineral Potential for Zambia's Economic Growth

By Aleeza Wilkins



The loud hum of machinery pulses in the background as a massive truck carries away tons of rock, stirring up clouds of dust in its wake. Engineers in hard hats and coveralls walk purposefully amid the controlled chaos. This area is the heart of the copper mining industry in Zambia, a land-locked country in sub-Saharan Africa.

Zambia ranked eighth in world copper production in 2015, according to the USGS Mineral Commodity Summaries.

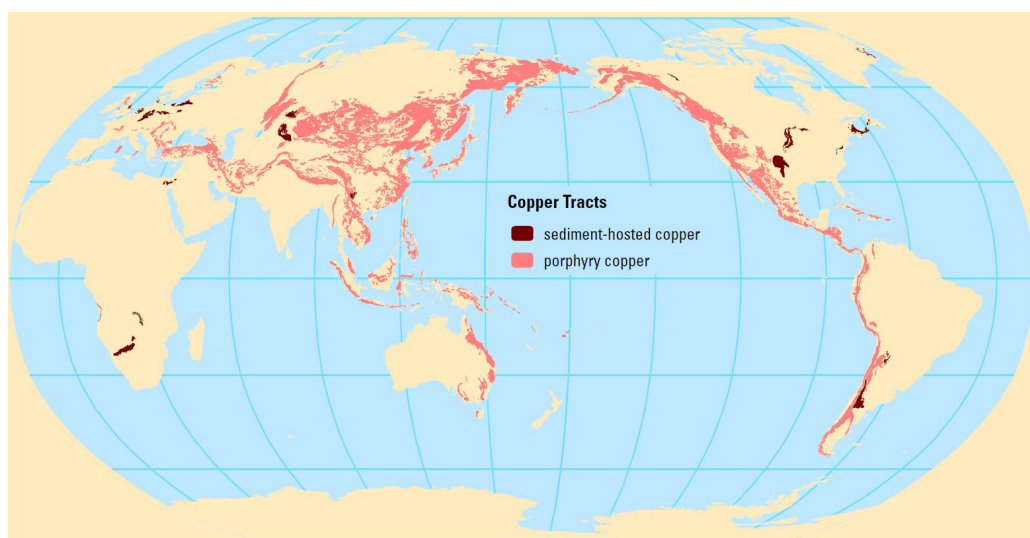
Copper mining drives Zambia's economic growth by providing foreign exchange, government revenue, and new jobs. In 2015, Zambian policymakers were at an economic crossroads. How could the country redesign the tax regime to ensure that Zambia got a fair share of its mineral wealth and also attracted new investors?

Current Mines and Undiscovered Deposits

To aid Zambian interests, The World Bank published their fifth bi-annual Zambia Economic Brief, entitled "Making Mining Work for Zambia," in June 2015. This report analyzed Zambia's booming copper industry and its impact on economic development.

"The analysis required a deep understanding not only of the existing copper mines but also the possibility for new discoveries and mining development," said Don Singer, a World Bank consultant tasked with undertaking the analysis. To do his analysis, Singer turned to the first-ever global assessment of undiscovered copper resources, conducted by the U.S. Geological Survey (USGS).

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This map shows copper in sediment-hosted and porphyry deposits around the world. Credit: USGS

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USGS Assessment

The USGS compiled data on known deposits, then outlined areas that might contain undiscovered deposits based on geological analysis, and then estimated the number of undiscovered deposits within those permissive tracts. The estimated number of undiscovered deposits, when combined with the quantities of metal found in typical ore deposits, allowed the USGS to forecast the amount of undiscovered metal.

Informed by the USGS global copper assessment findings, the Zambia Economic Brief stated, “Deposits of copper in Zambia

are larger than previously estimated.” Kundhavi Kadiresan, the World Bank’s Country Director for Zambia, concluded that “A new wave of investment in mining is needed to realize the potential of this wealth.”

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Global Impact

USGS global mineral assessments provide U.S. decision makers and the private sector with critically important information for conducting both foreign policy and international investment.

Internationally, this economic analysis is one example of how USGS assessments have an impact. Since the USGS publication of the Global Mineral Resources Assessment, geological surveys from Denmark, Greenland, and Finland have evaluated and used the USGS methodology to conduct their own assessments. The Geological Survey of Finland is working to identify potential sources of materials for the European Union, while the Geological Survey of Denmark and Greenland is working to support greater autonomy for the people of Greenland.



Copper mines can be loud and sometimes chaotic places, but they provide Zambia with plenty of revenue and jobs. Photograph credit: Mark Cocker, USGS

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Zambia is the eighth largest copper producer in the world. USGS assessments estimated that the potential for undiscovered copper deposits in Zambia is larger than once thought. Photograph credit: USGS