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Author



1. Byelongo Elisée Isheloke

Postdoctoral Research Fellow, University of Cape Town

Disclosure statement

Byelongo Elisée Isheloke receives funding from NRF for his current Postdoctoral Research Fellowship at the University of Cape Town. The article is based on his relatively recently completed PhD thesis, graduated in September 2018, completed at the Durban University of Technology, for which he got a DUT Scheme Scholarship for 2.5 years and NRF Scholarship only for the final year. In South Africa he has no political affiliation.

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Russian soldiers march during a Victory Day parade. The country makes guns and armoury as its main beneficiation output. Photo by Dmitry Korotayev/Epsilon/Getty Images

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South Africa needs a sounder mineral beneficiation policy to tackle the challenges the country faces, particularly rising unemployment. Its beneficiation policy is not very demanding and isn't pursued with any vigour.

For example, South Africa should be pursuing trade cooperation with Brazil, Russia, India and China. Together with South Africa they make up the BRICS grouping, which was formed in 2010 with the purpose of pursuing economic development.

China and India are resource-rich economies. But they still need additional raw materials to supplement their production amid a faster industrialisation agenda.

In addition, the BRICS have a rich history of beneficiation. Beneficiation activities in China and Russia have had a positive bearing on the economy and industrialisation. Both countries have developed strong [military and ammunition capabilities](#). For its part [India has focused on information technology](#) and [Brazil on the transport industry](#).

South Africa would benefit greatly from exchanging knowledge and skills with the other BRICS countries. Engagements that seek to do this could enhance cooperation among member countries. They could result in South Africa benefiting from what has worked – and what hasn't worked – elsewhere.

There has been [research](#) on how China (a BRICS member state) has used beneficiation to drive economic development. But little has been done on how the BRICS member countries can collectively drive beneficiation and how it could benefit South Africa.

The BRICS countries have never jointly agreed to a beneficiation policy. But work has been done on how [BRICS collaboration](#) could be improved. These opportunities have included skills transfer, information sharing and investment in both downstream and upstream beneficiation activities.

[For my previous research](#) I explored the effects of the BRICS partnership on mineral beneficiation in South Africa by investigating a partnership approach in beneficiation cooperation and commodity trade.

The aim of my study was to explore the effects of the BRICS partnership on mineral beneficiation in South Africa. I concluded by recommending a model which called for gradual beneficiation and experiments in South Africa with the support of the BRICS.

Findings

South Africa leads in mining of platinum group metals (PGMs) and gold. In addition, the production of ferrous metals such as manganese and chrome is of world class standard. The iron ore exports in the country have been reported to be incremental.

South Africa can boast of 90% of platinum metals produced in the world, 80% of manganese, 73% of chrome, 45% of vanadium and 41% of the gold extracted on earth. I conducted a survey among mining companies as part of my research. Around 80% were based in Gauteng (Johannesburg and Pretoria). Just under 60% of the companies involved were in the business of mining strategic minerals such as coal, diamonds, gold and platinum.

Skills transfer emerged as a major theme, with 90% of the participants stating that skills training was needed for downstream beneficiation. This pointed to the need for skills transfer among the BRICS. Examples included cutting and polishing of minerals and making craft jewellery.

It was also established that BRICS activities could be improved by collaborative synergies, financial resources provision and a favourable fiscal policy.

The study called for a conversation among stakeholders on the current mining charter and the national mineral beneficiation policy of South Africa. As BRICS countries are interested in commodity trade and mining activities, South Africa could tap into the knowledge of counterparts on beneficiation issues where success stories are visible. [A diversification strategy](#) is increasingly being adopted by the biggest South American conglomerates.

My research found that South Africa was outperformed by its counterparts within the partnership on economic grounds. However, it scored higher on democratic institutions and performance of the banking sector.

Next steps

The World Trade Organisation is not in favour of a country forcing local beneficiation onto the market (a participant stated this during the interview). This points to the need for South Africa to take a gradual approach.

It first needs to ensure steady economic growth, identify regional market opportunities and lobby the international partners in the BRICS to improve its chances of having the WTO and other stakeholders support national beneficiation policy.

Other hurdles that need to be cleared include the supply of water and power.

BRICS countries should encourage synergies among them towards a more responsible beneficiation practice. The synergies can be used in a form of “aggregate power” exerted to change and transform the global economy.