



India's Critical Mineral Acquisition Plans in Africa

For Prelims: [Critical mineral](#), [Electric vehicle](#), [Rare earth elements](#), [Khanij Bidesh India Ltd](#), [Supply Chain Resilience initiative](#), [Mineral Security Partnership \(MSP\)](#), [Net Zero emissions](#), [Geological Survey of India](#)

For Mains: Significance of Critical Minerals for India, India's strategy for securing critical minerals, Government Initiatives, India's domestic energy goals

[Source: BL](#)

Why in News?

India is stepping up its [critical mineral acquisition plans in Africa](#), challenging China's dominant position in the region.

- The race for critical minerals is a key focus, with India securing mining collaborations and access agreements with several African nations.

Why is India Stepping Up its Critical Mineral Acquisition Plans in Africa?

- **Resource Securitisation:** Ensure a stable and reliable supply of critical minerals for India's domestic industries, particularly the **growing [electric vehicle \(EV\)](#) and [renewable energy sectors](#)**.
 - **Reduce dependence on imports** and mitigate potential supply chain disruptions.
 - Support the country's push towards **self-reliance and strategic autonomy** in critical sectors.
- **Countering China's Dominance:** China is estimated to control over 5% of cobalt processing facilities in the [Democratic Republic of Congo \(DRC\)](#).
 - Chinese companies are estimated to own 80% of the **Tenke Fungurume mines**, which produce nearly 12% of the world's cobalt resource.
 - China has also made substantial investments in securing lithium resources in Zimbabwe.
 - India aims to establish a stronger presence in the African mining sector to counterbalance China's influence.
- **Access to High-Quality Reserves:**
 - Africa holds significant reserves of critical minerals like cobalt, [copper](#), [lithium](#), and [rare earth elements](#).
 - Over **30% of the world's critical mineral deposits are found in Africa**, presenting an opportunity for African countries to become major global suppliers and trade among themselves.
 - Acquire access to high-quality and economically viable mineral deposits to meet India's growing demand.
 - Leverage Africa's mineral wealth to support India's industrial and technological aspirations.
- **Strengthening Bilateral Ties:** India is leveraging **government-to-government (G2G)** negotiations to secure mining collaborations and access [agreements with African nations](#).

- India has signed MoUs with South Africa, Mozambique, Congo, Tanzania, Zambia, Malawi, the Republic of Cote d'Ivoire, and Zimbabwe.
- This helps India build stronger diplomatic and economic ties with countries in the region.
- A [Confederation of Indian Industry \(CII\)](#) report stated that **Indian investments in Africa could reach USD 150 billion by 2030**. It noted that since April 1996, India has invested USD 74 billion in Africa.

Sl. No.	Critical Mineral	Percentage (2020)	Major Import Sources (2020)
1.	Lithium	100%	Chile, Russia, China, Ireland, Belgium
2.	Cobalt	100%	China, Belgium, Netherlands, US, Japan
3.	Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
4.	Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
5.	Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
6.	Germanium	100%	China, South Africa, Australia, France, US
7.	Rhenium	100%	Russia, UK, Netherlands, South Africa, China
8.	Beryllium	100%	Russia, UK, Netherlands, South Africa, China
9.	Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
10.	Strontium	100%	China, US, Russia, Estonia, Slovenia
11.	Zirconium(zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
12.	Graphite(natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
13.	Manganese	50%	South Africa, Gabon, Australia, Brazil, China
14.	Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
15.	Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

The net import reliance for critical minerals of India (2020) (Source: A report on 'Unlocking Australia-India Critical Minerals Partnership Potential' by Australian Trade and Investment Commission, July 2021)

What are India's Other Overseas Critical Mineral Acquisition Plans?

- [Khanij Bidesh India Ltd \(KABIL\)](#): It is a joint venture of National Aluminium Company Ltd (NALCO), Hindustan Copper Ltd (HCL), and Mineral Exploration and Consultancy Ltd (MECL) the [Central Public Sector Enterprises \(CPSEs\)](#) under the **Ministry of Mines**.
 - It aims to source and process strategic minerals from foreign sources, particularly focusing on battery minerals for supply in India.
- **Coal India Limited (CIL)**: It is targeting the acquisition of lithium, cobalt, and nickel assets abroad, as it aims to diversify its operations beyond its core coal business.
 - [CIL](#) has amended its Memorandum of Association to **include non-ferrous and critical minerals**.
- **Minerals Security Partnership (MSP)**: India joined the [Mineral Security Partnership \(MSP\)](#) in June 2023, making it the 14th member alongside countries like the United States, Australia, Canada, and others.
 - India seeks to leverage this framework to aid **Indian public sector undertakings (PSUs)** in acquiring critical mineral assets abroad.
 - Established in 2022, MSP aims to build reliable supply chains through collaboration between governments and industry, providing diplomatic and financial aid for strategic projects along the value chain.
- [Supply Chain Resilience initiative \(SCRI\)](#): Collaboration with Australia and Japan aimed at ensuring supply chain resilience for critical minerals.

- **Australian Partnership:** India signed the Critical Minerals [Investment Partnership with Australia](#) to invest in critical minerals projects.
- **Global Collaborations:** India is collaborating with countries like Chile, Argentina, and Bolivia, known for their significant lithium resources.
 - **India is in talks with Sri Lanka to acquire a graphite mine block**, as part of its plan to secure critical mineral supplies globally.
 - Graphite is crucial for India as it is used in battery manufacturing. The **Sri Lankan graphite is considered among the purest in the world**, with over 98% carbon content.

What Initiatives have Prompted India to Secure Critical Minerals?

- **Panchamrit Vision:** India's commitment to [climate change](#) mitigation includes growing [non-fossil fuel energy capacity to 500 GW by 2030](#) and achieving [Net Zero emissions by 2070](#).
- **Strategic Initiatives:**
 - **Planning Commission (2011):** Highlighted the need for strategic mineral resources.
 - **Expert Committee (2019):** Focused on cobalt and lithium sourcing from Australia, Argentina, and Bolivia.
- [Geological Survey of India \(GSI\)](#): Focused on finding new resources through advanced exploration techniques.
- **MMDR Amendment Act, 2023:** The [Mines and Minerals \(Development and Regulation\) Amendment Act, 2023](#), amend the Mines and Minerals (Development and Regulation) Act, 1957, to strengthen the exploration and **extraction of critical minerals essential for India's economic development and national security**.
- [Offshore Area Minerals \(Development And Regulations\) Amendment Act, 2023](#): It regulates the **mining of minerals in the maritime zones of India**, categorising activities into reconnaissance, exploration, and production.

Critical Minerals

- **About:** Critical minerals are those minerals that are **essential for economic development and national security**, the lack of availability of these minerals or even the concentration of existence, extraction or processing of these minerals in a few geographical locations may lead to supply chain vulnerability and disruption.
 - In June 2023, India published its first detailed report on critical minerals, identifying 30 essential minerals.
 - These minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.
- **Significance:** These minerals are crucial for manufacturing mobile phones, computers, batteries, EVs, solar panels, and wind turbines.
 - The [Indian Economic Survey 2022-23](#) highlighted the significance of rare earth elements and critical minerals as potential future geopolitical battlegrounds, akin to crude oil over the past 50 years.
 - The shift to clean energy technologies is rapidly increasing the demand for critical minerals.
 - India's domestic EV market is projected to grow at a [compounded annual Growth Rate \(CAGR\) of 49% from 2022 to 2030](#), with an anticipated annual sales volume of 1 crore by 2030, driving demand for advanced chemistry cell (ACC) batteries.

Drishti Mains Question:

Q. Evaluate India's initiatives and partnerships for securing critical minerals globally and their implications for India's energy security and economic growth.

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UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims:

Q. Recently, there has been a concern over the short supply of a group of elements called 'rare earth metals'. Why? (2012)

1. China, which is the largest producer of these elements, has imposed some restrictions on their export.
2. Other than China, Australia, Canada and Chile, these elements are not found in any country.
3. Rare earth metals are essential for the manufacture of various kinds of electronic items and there is a growing demand for these elements.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (c)

Mains:

Q. Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. (2021)

Q. "In spite of adverse environmental impact, coal mining is still inevitable for development". Discuss. (2017)