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TOPIC

**CHINA'S STRATEGIC MOVES &
RECASTING INDIA'S CRITICAL
MINERALS PUSH**

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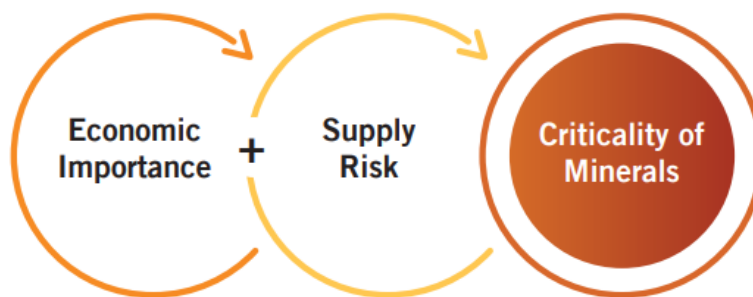
CHINA'S STRATEGIC MOVES & RECASTING INDIA'S CRITICAL MINERALS PUSH

Context

- The recent strategic maneuvers by China in controlling the export of critical minerals have sent ripples across the global economic landscape, prompting nations like India to rethink their approach to securing these vital resources.

About Critical Minerals

- These are the minerals that are **essential for the production of modern technologies**. They are important for **national security and the economy**.
- These minerals are labelled as critical because of their **lack of availability (spatial distribution), methods of extraction or processing, and vulnerability and disruption in supply chains**.
- These minerals impact the economy relatively higher than the other raw materials when the **risk of supply shortage**.



- The **Ministry of Mines** has identified **30 critical minerals** essential for national security, economic development, and technological advancement.
 - These minerals include *antimony, beryllium, cobalt, copper, gallium, germanium, graphite, hafnium, indium, lithium, molybdenum, nickel, rare earth elements (total 17) and many others*.

Applications of Critical Minerals & REEs

- Nuclear and Defence:** Titanium, Zircon, Monazite (source of Rare Earths); Rare Earths which include: Neodymium, Praseodymium, Dysprosium, Europium, Yttrium, and Terbium;
- Power Sector:** Lithium, Nickel, Silicon, Cobalt, Manganese, Phosphate, Natural Graphite, Platinum Group of Elements (PGE), and Rare Earth Elements (REE) etc.
- Fertilizers:** Rock Phosphate, Potash;
- Medical Techniques (MRI, X-Ray etc) & Space Program:** Neodymium and Gadolinium;

China's Dominance in Critical Minerals

- China commands a significant share of the production and processing of **rare earth elements (REEs)** and **other strategic minerals** such as tungsten, gallium, magnesium, beryllium, hafnium, lithium, cobalt, and nickel.
- According to the **International Energy Agency (IEA)**, China processes **over 85% of the world's rare earths**, **controls 70% of lithium refining**, and has a stronghold in cobalt mining through investments in Africa.

Reasons Behind China's Dominance

- Geopolitical Strategy & Decades-long Investments:** By striking deals with mineral-rich nations, particularly in Africa and South America, China has secured long-term supply agreements, leaving competitors, including India, scrambling for access.
- Technological Supremacy:** Advanced refining and processing technologies, with substantial government-backed R&D.

- **Integrated Supply Chains:** Vertical integration from mining to manufacturing, enabling efficiency and cost-competitiveness.
- **Vertical Integration:** The country controls every stage of the critical minerals supply chain, from mining and refining to manufacturing, ensuring a steady flow of processed materials.

Implications for India

- **Dependence on Imports:** India imports nearly all of its critical minerals, leaving its renewable energy, EV, and defense ambitions vulnerable to supply disruptions.
 - ♦ India's reliance on China for critical minerals is particularly high for six minerals: *Bismuth (85.6%), Lithium (82%), Silicon (76%), Titanium (50.6%), Tellurium (48.8%), and Graphite (42.4%)*.
- **Limited Domestic Reserves:** While India possesses some reserves of critical minerals, they are insufficient to meet domestic demand, necessitating aggressive international sourcing.
- **Energy Transition Goals:** India's renewable energy targets, particularly in solar and battery storage, could face delays due to supply disruptions.
- **Defense and Electronics Manufacturing:** Sectors reliant on rare earths are at risk of cost escalations and supply insecurity.
- **Geopolitical Dependencies:** Over-reliance on China undermines India's strategic autonomy and bargaining power.

Recasting India's Strategy

- **Strengthening Bilateral Ties:** India should enhance partnerships with mineral-rich nations such as **Australia, Chile, and Namibia**.
 - ♦ Recently signed agreements with Australia for lithium and cobalt supply are a step in the right direction, but India needs to secure more such partnerships.
- **Investing in Domestic Capabilities:** India must prioritize domestic exploration and extraction of critical minerals.
 - ♦ Allocating funds for geological surveys and promoting private sector participation can help boost domestic production.
- **Diversifying Supply Chains:** Reducing dependency on China requires diversifying the supply chain by forming strategic alliances with countries in Africa, Latin America, and Southeast Asia and with countries like Australia, Canada, and Chile.
 - ♦ Leverage multilateral platforms like the **Quad and Indo-Pacific Economic Framework (IPEF)** to negotiate access to minerals.
- **Focusing on Recycling and Sustainability:** Developing technologies for recycling critical minerals from electronic waste and used batteries can provide a sustainable alternative to mining and reduce reliance on imports.
- **Building Strategic Reserves:** Establish a strategic reserve of critical minerals to cushion against supply disruptions.
 - ♦ Adopt a stockpiling approach similar to oil reserves.
- **Leveraging Technology:** Invest in next-generation technologies, such as deep-sea mining and synthetic alternatives, to reduce dependency on traditional mineral sources.

Policy Reforms

- **Mines and Minerals (Development and Regulation) Amendment Act, 2023:** It empowers the central government to auction critical mineral blocks, ensuring transparency and efficiency in the allocation process.
- **National Critical Mineral Mission (NCMM):** It aims to enhance exploration, production, and processing of critical minerals within the country.
 - ♦ It is expected to play a pivotal role in achieving self-reliance and supporting the country's transition to a green economy.
- **Khanij Bidesh India Ltd. (KABIL):** It has been established to identify and acquire overseas mineral assets, primarily focusing on critical and strategic minerals like lithium, cobalt, and nickel.
 - ♦ Collaborations with countries such as Argentina and Australia are part of this strategic approach.

- **Mining Tenement System (MTS):** It is an advanced digital platform designed to streamline processes, enhance transparency, and improve efficiency in mineral resource management.

Conclusion and Road Ahead

- As China consolidates its control over this strategic sector, India needs to adopt a proactive, forward-looking strategy to mitigate risks and ensure its strategic autonomy.
- Collaborative efforts, technological advancements, and robust policies can transform India from a reactive participant into a significant player in the critical minerals domain.
- By recalibrating its critical minerals push in light of China's strategic moves, India has the opportunity to strengthen its position in the global economic order while ensuring energy security and sustainable development.

Source: TH



Mains Practice Question

[Q] Considering China's strategic maneuvers in securing critical minerals, how should India recalibrate its approach to ensure self-reliance and sustainability in its critical minerals sector?

