

NEWS TODAY

Institute for Energy Economics and Financial Analysis (IEEFA) Reports released “India’s Hunt for Critical Minerals”

IEEFA’s report examines five critical minerals - **cobalt, copper, graphite, lithium and nickel** - from perspectives of import dependency, trade dynamics, domestic availability, and global price fluctuations.

- Report finds that India remains **heavily reliant on imports** for these critical minerals, with **100% external dependence for lithium, cobalt, and nickel**.
- India’s **demand** for critical minerals is **expected to more than double by 2030**.

About Critical Minerals

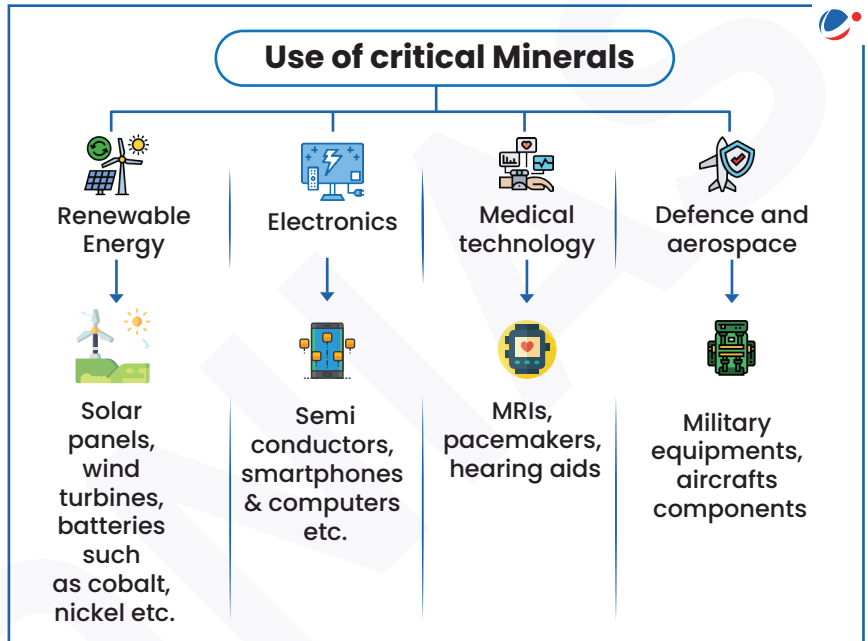
- A mineral is labelled as critical **when risk of supply shortage and associated impact** on economy is (relatively) **higher than other raw materials**.

Concern related to Critical Minerals import dependence

- **Strategic Vulnerability:** Dependence on a few key suppliers, especially China.
- **Price Volatility:** Fluctuations in global demand and supply may impact manufacturing cost and energy production.
- **Economic Implications:** Rising import costs can erode India's competitiveness in global markets.
- **Renewable Energy Goals at Risk:** High import could hinder India's transition to clean energy and its electric vehicle ambitions.

Report Suggestions

- India must develop strategies to mitigate risks associated with mineral dependencies **and foster domestic production**.
- **Explore investment opportunities** in resource-rich, friendly nations, like Australia, Chile, Ghana and South Africa.



ISRO and Department of Biotechnology (DBT) Join Forces to Advance Space Biotechnology Research

The key challenges in space missions are the lack of **continuous availability of nutrients, waste management, preservation of food, microgravity, radiation, health hazards** such as cancers, cataracts, bone muscle loss, etc.

- In this regard, **Space biotechnology** would study how living organisms **adapt, function, and evolve in microgravity** conditions so as to advance **space exploration and human survival**.

Space biotechnology applications and their Significance:

- **Microgravity Research:** Space's microgravity enables better-quality **protein crystal growth**, enhancing understanding of structures for precise drug development.
- **Radiation Research:** E.g., BioSentinel (a NASA programme) will predict how human cells will **repair double-strand breaks** in response to **ionising radiation** in space.
 - ⊕ **BioSentinel** was launched in 2022 on Artemis I.
- **Environmental Monitoring:** Study of microbes can be used for bioremediation to convert Mars and Moon regolith into soil capable of plant growth.
- **Disease Modelling:** Space biotechnology research can help model diseases to address the challenges astronauts face during long-duration space missions.
- **Bioregenerative Life Support Systems:** It enables self-sustaining missions through waste recycling, advancing Earth's sustainability and resource management solutions.

Initiatives

- **India:** Axiom-4 mission and Gaganyaan mission.
- **Global Initiatives:** **Space Biology Program** (NASA); **Biolab** (European Space Agency); **Space breeding programs** (China National Space Administration (CNSA)).

Greenhouse Gas Bulletin (GGB) released by the World Meteorological Organisation (WMO)

GGB presents the latest analysis of observations from the WMO Global Atmosphere Watch (GAW) Programme on concentrations of long-lived greenhouse gases (LLGHGs) in the atmosphere.

- WMO's GAW Programme monitors atmospheric composition changes and helps to understand interactions between air, oceans, and Earth's biosphere.

About GGB

- It compares current global carbon dioxide (CO₂), Methane (CH₄), and Nitrous oxide (N₂O) levels with last years and pre-industrial level (before year 1750).
 - ⊖ It also provides insights on Radiative forcing changes by LLGHGs like CO₂, CH₄, and CFCs.
- CO₂, CH₄ and N₂O, together with dichlorodifluoromethane (CFC-12) and trichlorofluoromethane (CFC-11), account for approximately 96% of radiative forcing.

Key observations of the report

- **GHGs concentration:** The globally-averaged surface concentration of CO₂, CH₄ & N₂O (in 2023), are 151%, 265% and 125% respectively of pre-industrial (before 1750) levels.
- **Radiative forcing:** By LLGHGs increased by 51.5% between the period 1990-2023, with CO₂ accounting for ~81%.
- **Atmospheric methane (CH₄):** It saw its largest 3-year increase on record, driven by higher emissions from natural wetlands due to climate change.
- **Climate change:** It could make ecosystems release more GHGs, make wildfires emit more CO₂ and oceans absorb less CO₂, thereby, amplifying global warming and ocean acidification.

About Radiative forcing by long-lived GHGs

- **Radiative forcing** represents the amount of energy per unit area that is added or removed from the climate system.
 - ⊖ It is the measure of how much these gases affect the Earth's energy balance. These gases trap some of the heat that would otherwise escape to space, causing the planet to warm up.

About WMO:

- ⊖ **About:** specialized agency of the United Nations (UN).
- ⊖ **H/Qs:** Geneva, Switzerland.
- ⊖ **Genesis:** Established in 1950.
- ⊖ **Members:** 187 Member States (including India) and 6 Member Territories.

Pradhan Mantri Vanbandhu Kalyan Yojana (PMVKY) completes 10 years

PMVKY is a landmark initiative that was launched in 2014 as a comprehensive strategy to address the unique challenges faced by tribal communities in India.

About PMVKY

- **Type:** Center sector scheme that focuses on integrated, holistic and inclusive development of tribal communities.
- **Aim:** To improve the socio-economic conditions of tribal populations and preservation of their cultural heritage and identity.
- **Implementation:** Ministry of Tribal Affairs (MoTA).

Six Key initiatives taken Under the PMVKY

- **Pradhan Mantri Adi Adarsh Gram Yojana:** Initiative targets critical sectors such as road and telecom connectivity, education, health services, etc.
- **Development of Particularly Vulnerable Tribal Groups (PVTGs):** Pradhan Mantri PVTGs Development Mission launched in 2023-24, provides essential amenities like secure housing, clean drinking water, sanitation, education, health, nutrition, etc.
- **Support to Tribal Research Institutes (TRI):** Initiative to facilitate research and documentation efforts related to tribal communities.
- **Others:** Pre-Matric Scholarships, Post-Matric Scholarships and Administrative Assistance for Project Management Units.

Tribals in India:

- Scheduled Tribes (ST) constitute approximately 8.6% of population of India.
- There are over 730 Scheduled Tribes notified under Article 342 of the Constitution of India.
 - ⊖ There're 75 identified PVTGs in 18 States, and Union Territory of Andaman & Nicobar Islands.

Other Steps for Tribal Welfare

- **Eklavya Model Residential Schools:** Established to provide quality education to Scheduled Tribe students from classes VI to XII.
- **Pradhan Mantri Janjatiya Vikas Mission (PMJVM):** By merging two existing schemes- "Mechanism for Marketing of Minor Forest Produce through Minimum Support Price" and the "Institutional Support for Development and Marketing of Tribal Products."
- **Development Action Plan for Scheduled Tribes (DAPST):** Addition to MoTA, 41 ministries and departments contribute a percentage of their total scheme budgets each year towards tribal development.

CERT-In releases advisory on Online Scams

Cyber-security agency Computer Emergency Response Team of India (CERT-In) shared a list of ways in which online scams are being perpetrated by fraudsters in country including "digital arrest".

- As per National Crime Records Bureau (2022) report 'Crime in India', cases registered under Fraud for Cybercrime for 2022 were 17470.

Key Advisory

- Do not transfer money under pressure** as legitimate Law Enforcement Agencies will never pressure for sending money immediately.
- Never disclose sensitive personal or financial details** over phone or video calls, especially to unknown numbers.

About Digital Arrest

- It is a **new form of cybercrime** where **perpetrators pose as law enforcement officials**, like CBI agents, income tax officers, or customs agents, and **initiate contact with victims via phone calls**.
- In India, **citizens lost around Rs 120 crore to digital arrest frauds** in first quarter of 2024.
- According to Ministry of Home Affairs (MHA), **digital arrests have become a prevalent method of digital fraud**. Many of those carrying out these frauds are based in **Myanmar, Laos and Cambodia**.

Challenges in tackling Cybercrime

- Lack of trained and qualified manpower** to implement counter measures.
- Lack of awareness and culture of cyber security**, at individual as well as organizational level.

Government initiatives to tackle Cybercrime

- Indian Cybercrime Coordination Centre (I4C)**: Under MHA, it coordinates activities related to combating cybercrime in country.
- CERT-In**: It is the national nodal agency for responding to computer security incidents.
- National Cyber Crime Reporting Portal**: Launched as part of I4C to enable public to report incidents of cybercrimes.
- National Toll-free Helpline number 1930**: Operationalized to provide citizen assistance in lodging online cyber complaints.

India-Spain Joint Statement

It was released after the visit of the **President of the Government of Spain to India**.

- This marked the **first visit by a Spanish President** to India in 18 years.

Key outcomes

- Defense manufacturing**: Joint inauguration of the **C295 Aircraft Final Assembly Line** in Vadodara by Tata Advanced Systems in partnership with Airbus Spain.
- Investment Facilitation**: Establishment of a **Fast Track Mechanism** in India's DPIIT and Spain's Directorate General of International Trade and Investment to promote mutual investments.
- Consular Expansion**: Announcement of a **Spanish Consulate in Bengaluru** and the operationalization of an **Indian Consulate in Barcelona**.
- Cultural Cooperation**:
 - Cultural Exchange Programme** launched for 2024-2028.
 - Declaration of **2026 as the India-Spain Year of Culture, Tourism, and AI**.

India-Spain Bilateral Relations

- Diplomatic relations between the two countries were established in **1956**.

Significance of Bilateral Relations

- Defense Ties**: Strengthened defense cooperation through India-Spain Defence Joint Working Group, joint projects like the C295 aircraft manufacturing in India etc.
- Economic and Commercial Growth**: Spain is **India's 6th largest trade partner in Europe**. Bilateral trade reached **US\$ 9.9 billion in 2023**.
- Multilateral and Global cooperation**:
 - Support for each other's **United Nations Security Council candidacies**.
 - Shared commitment to **addressing global challenges** like **climate change, counter-terrorism, and sustainable development**.

Also in News



Sambhar Lake

Over 40 migratory birds died at Sambhar Lake in Rajasthan

About Sambhar Lake

- The name "Sambhar" is derived from **Shakambhari**, the 2,500-year-old tutelary deity of the Chauhan Rajputs.
- Wetland**: It is **India's largest saline lake**.
- Also a Ramsar Site** (designated in 1990), **recognized for its international ecological importance**.
- Biodiversity**: **Attracts tens of thousands of migratory birds, including flamingos**, from northern Asia and Siberia between November to February.



Turmeric (Curcuma longa L.)

A recent studies shows evidence of turmeric adulteration with **lead chromate** across South Asia

About Turmeric

- It is a rhizomatous herb, which is **cultivated extensively in Asia, India, China, and other countries with a tropical climate**.
 - A rhizomatous herb is a plant with a horizontal, underground stem called a rhizome.
- The aqueous extract of Turmeric has **bio-pesticidal properties**.
- Used as **condiments, a dye** and as an **aromatic stimulant** in several medicines.
- India is the largest producer** of turmeric in the world and **shares 80% of total world production**.
- Cultivation States**: Telangana, Andhra Pradesh, Maharashtra, Orissa, Tamil Nadu, Karnataka and Kerala.



Right to Privacy

Justice KS Puttaswamy, petitioner in right to privacy case, passes away at 98.

Law for Right to Privacy

India

⊕ **Supreme Court in K.S. Puttaswamy v. Union of India case in 2017** ruled that 'Right to Privacy is a fundamental and inalienable right' with reasonable restrictions.

- ◆ It is protected as an intrinsic part of the **right to life and personal liberty (Article 21)**.

Global

⊕ **Article 12 of the Universal Declaration of Human Rights, 1948 and Article 17 of the International Covenant on Civil and Political Rights (ICCPR), 1966**, legally protect persons against "arbitrary interference" with one's privacy.



Mission Amrit Sarovar

The Prime Minister said over **60,000 Amrit Sarovars were constructed** across villages for future generations.

Mission Amrit Sarovar

➤ Mission Amrit Sarovar was launched in 2022, as **part of India's "Azadi Ka Amrit Mahotsav"** celebrations for the 75th year of independence.

➤ **Aim: Every district** of the country will construct or rejuvenate at **least 75 Amrit Sarovars with a pondage area of at least 1 acre.**

➤ Mission focuses on **water conservation, people's participation and proper utilization of soil excavated** from the water bodies.

➤ There is **no separate financial allocation** for the Mission.



National commission for Indian system of medicine (NCISM)

Workshop for drafting Ayurveda Process Handbook concludes at NCISM.

About NCISM

➤ **Genesis:** It is a **statutory body** constituted under **NCISM Act, 2020**.

➤ **Composition:** **19 members** (including **1 chairman, 15 Ex Officio members, and 3 part time members**)

Aim and objective

- ⊕ Improve **access to quality and affordable Ayurveda, Unani, Siddha and Sowa-Rigpa (AUS&SR)** medical education.
- ⊕ **Ensure availability of adequate and high quality AUS&SR** medical professionals in all parts of the country.
- ⊕ Maintain a **National AUS&SR medical register for India.**



Indigenous herbal knowledge

Recently, Custodians of herbal traditional knowledge from Jammu & Kashmir and Gujarat were granted herbal patents.

About Indigenous herbal knowledge

➤ Knowledge holders interact within their **ecological system** and possess **deep understanding of local flora** accumulated through **experiences, experiments and wisdom.**

➤ In India, of the **17,000 species of higher plants, 7500** are known for medicinal uses (highest proportion of plants known for their medical purposes in any country).

Initiatives to protect traditional knowledge in India: Traditional knowledge digital library; National IPR Policy 2018, etc.



BRIC-National Agri-Food Bio-Manufacturing Institute (BRIC-NABI)

Recently, a new complex of India's first Biomanufacturing Institute, named **BRIC-NABI**, was inaugurated at Mohali (Punjab).

About BRIC-NABI

➤ Formed through the strategic merger of National Agri-Food Biotechnology Institute (**NABI**) and the **Centre of Innovative and Applied Bioprocessing (CIAB)**.

➤ **Funded by:** Department of Biotechnology

Aims:

- ⊕ Promote cutting-edge research in **genetic manipulation, metabolic pathways, etc.**
- ⊕ Address India's **biomanufacturing gap** by creating large-scale production facilities and nurturing startups.



Clouded Leopard

Studies found that the Island of Taiwan is highly suitable for reintroduction of the species.

About Clouded Leopard (*Neofelis nebulosa*)

➤ **Physical features:** They have distinct cloud shaped patches on their pale-yellow to brown coloured fur that camouflages them in dense forests.

➤ **Habitat and Ecology:** Found in south-east Asia including India, China, Malaysia etc.

- ⊕ Prefers dense evergreen forest

Conservation Status:

- ⊕ **IUCN:** Vulnerable
- ⊕ **CITES:** Appendix I
- ⊕ **Wildlife (Protection) Act, 1972:** Schedule I

➤ **Clouded leopards National Park of Tripura** is India's **first dedicated wildlife park** to spot Clouded leopards located **inside Sipahijola wildlife sanctuary.**

Place in News



Georgia (Capital: Tbilisi)

Recently, the USA and EU called for a probe after reports of Georgia election violations.

Political Features

➤ It is situated in the **Eastern European region of the South Caucasus.**

➤ **Boundaries:** Russia (North and Northeast); Azerbaijan (East and Southeast); Armenia and Turkiye (South)

➤ **Sea boundary:** Black Sea (West).

Geographical Features

➤ **Highest Point:** Mount Shkhara

➤ **Mountain Ranges:** Greater Caucasus range

➤ **Major Rivers:** Inguri, Rioni, and Kodori.

Conflict regions: Abkhazia, South Ossetia & Ajaria.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI