DAILY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

DATE: 28/10/2025 (TUESDAY)

Table of Contents

1. Special Intensive Revision (SIR) 2.0 of Electoral Rolls

1. Introduction & Context

- The **Election Commission of India (ECI)** has launched the **second phase of the Special Intensive Revision (SIR) 2.0** of electoral rolls in **12 States and Union Territories**, covering nearly **51 crore voters**.

- The exercise aims to **update and purify voter lists** ahead of upcoming elections, particularly in **poll-bound Tamil Nadu, West Bengal, Kerala, and Puducherry.**

2. States and U.T.s Covered

- The 12 States/UTs included in SIR 2.0 are:
  Tamil Nadu, West Bengal, Kerala, Puducherry, Uttar Pradesh, Madhya Pradesh, Rajasthan, Chhattisgarh, Goa, Gujarat, Andaman & Nicobar Islands, and Lakshadweep.

- **Assam** is excluded temporarily due to its separate citizenship verification process supervised by the **Supreme Court** under the **Citizenship Act, 1955**.

3. Objective and Legal Framework

- **Objective:** To ensure **accuracy, inclusivity, and integrity** of the electoral rolls by identifying and removing duplicates, deceased voters, and adding eligible new voters.

- **Legal Provisions:**

  o Conducted under **Section 21 of the Representation of the People Act, 1950** – which empowers the ECI to revise electoral rolls annually or as needed.

  o Supported by **Article 324 of the Constitution**, which vests the **superintendence, direction, and control** of elections in the Election Commission of India.

Rolls revision

Phase 2 of the special intensive revision of electoral rolls will be held between November 2025 and February 2026 across 12 States and Union Territories, covering 51 crore voters

TIMELINE
- Enumeration start: November 4, 2025
- Enumeration end: December 4, 2025
- Draft electoral rolls release: December 9, 2025
- Final electoral rolls publication: February 7, 2026

The first phase of SIR was held in Bihar. FILE PHOTO

UNION TERRITORIES: Andaman & Nicobar Islands, Lakshadweep, Puducherry

STATES: Chhattisgarh, Goa, Gujarat, Kerala, Madhya Pradesh, Rajasthan, T.N., U.P., Bengal

- The process involves **door-to-door verification**, **public display of draft rolls**, and **claims and objections period** for voters.

4. Key Issues & Political Concerns

- **Trinamool Congress (West Bengal)** and **DMK (Tamil Nadu)** have expressed apprehensions about potential **discrepancies and exclusion errors**.

- These concerns highlight the **political sensitivity** around voter registration, especially before major elections.

- The exclusion of **Assam** stems from the ongoing **citizenship verification process (NRC-related)**, reflecting a unique legal and demographic situation.

5. Administrative and Constitutional Significance

- Freezing of voter lists from **midnight of the announcement** ensures **stability and uniformity** in electoral data before elections.

- The exercise reinforces **electoral integrity**, ensuring that only **eligible citizens** are included.

- It reflects the **ECI's constitutional mandate** to conduct **free and fair elections**, a **basic feature of the Indian Constitution** as affirmed in the **Kesavananda Bharati Case (1973)**.

6. Conclusion and UPSC Relevance

- The SIR 2.0 is a **significant step in strengthening India's electoral democracy**, ensuring transparency, inclusion, and legitimacy of the voting process.

- The exclusion of Assam highlights the **interplay between electoral laws and citizenship verification**, a key constitutional concern.

- **UPSC Relevance:**

  o **GS Paper 2 (Polity & Governance):** Role of Election Commission, electoral reforms, Representation of the People Act.

  o **GS Paper 1 (Current Affairs linkage):** Political developments and governance issues in States.

  o **Ethics (GS 4):** Importance of integrity and transparency in electoral processes.

Definition (Key Term):

- **Special Intensive Revision (SIR):** A comprehensive process of verifying and updating the electoral rolls to ensure that every eligible citizen is registered and inaccuracies are removed, usually before major elections.

In essence:
SIR 2.0 exemplifies the **Election Commission's proactive effort** to maintain electoral credibility and democratic participation while balancing legal and constitutional complexities across diverse Indian states.

2. Supreme Court Upholds Calcutta High Court Order on Resumption of MGNREGS in West Bengal
1. Background and Context

- The **Supreme Court of India** dismissed the **Central Government's petition** challenging the **Calcutta High Court's directive** to resume the **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)** in **West Bengal** from **August 1, 2025**.

- The 100-day employment scheme had been **suspended in the State since 2022** following **allegations of financial irregularities** in its implementation.

2. Key Developments and Stakeholder Reactions

- The **Calcutta High Court** had earlier ordered that **MGNREGS work must resume** from August 1, recognizing it as a statutory right under the Act.

- The **Supreme Court's dismissal** of the Centre's appeal was hailed as a **victory for rural workers' rights** by the **Paschim Banga Khet Majoor Samity (PBKMS)** and several **political parties**, including the **Trinamool Congress (TMC)** and **CPI(M)**.

- TMC termed it a "**historic victory**" against "central injustice," while CPI(M) accused both the Centre and State of delaying implementation.

3. Legal and Constitutional Framework

- **MGNREGS** is implemented under the **Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MGNREGA)**, which provides a **legal guarantee** of **100 days of wage employment** to every rural household whose adult members volunteer for unskilled manual work.

- **Article 41** of the **Directive Principles of State Policy (DPSP)** directs the State to secure the **right to work** within its economic capacity.

- The **Right to Work**, though not a Fundamental Right, has been interpreted by courts as **integral to the right to life (Article 21)** when linked to livelihood and dignity.

- The **Supreme Court's decision** reinforces **federal accountability**, as implementation is a **shared responsibility** of the **Centre and State** under **Section 22 of MGNREGA**.

4. Key Issues and Implications

- The suspension of MGNREGS funds in West Bengal led to **livelihood distress** among rural workers and became a **Centre-State political flashpoint**.

- The SC ruling emphasizes that **administrative or political disputes cannot override statutory welfare entitlements**.

- It also reaffirms the **judicial protection of social welfare legislation**, ensuring that rights-based schemes remain insulated from political interference.

5. Broader Significance

- The verdict highlights the **judiciary's role in upholding socio-economic rights**, especially for marginalized communities dependent on MGNREGS.

- It strengthens the **principle of cooperative federalism**, urging both Centre and State to fulfill their **constitutional and statutory duties**.

- The case serves as a reminder of the **importance of transparency, accountability, and timely fund disbursement** in welfare schemes.

Definition (Key Term):

- **MGNREGS:** A **rights-based rural employment programme** ensuring livelihood security by providing at least **100 days of wage employment** per year to rural households; it is **demand-driven**, legally enforceable, and aims at **poverty alleviation through asset creation and social inclusion**.

6. Conclusion and UPSC Relevance

- The Supreme Court's decision in favor of resuming MGNREGS in West Bengal is a **landmark affirmation of the "Right to Work" as a justiciable socio-economic right** under Indian democracy.

- It reiterates the **State's constitutional responsibility** to implement welfare laws in letter and spirit.

- **UPSC Relevance:**

    o **GS Paper 2:** Government policies and interventions; Centre-State relations; Role of Judiciary in governance.

    o **GS Paper 3:** Inclusive growth, rural development, and poverty alleviation programs.

    o **GS Paper 4 (Ethics):** Public accountability, welfare administration, and duty towards vulnerable sections.

In Essence:

The ruling underscores that **entitlements under MGNREGA are not favors but enforceable rights**, reinforcing **India's welfare-state ethos** and the **judiciary's commitment to social justice and federal balance**.

3. Unseasonal Rains Damage Onion Crops in Maharashtra – Farmers Demand Relief

1. Background and Current Situation

- **Unseasonal rains (October 23–27, 2025)** have caused **widespread damage** to onion crops across **major growing districts of Maharashtra** including **Nashik, Ahmednagar, Pune, Jalgaon, Solapur, Satara, and Dhule**.

- The **Maharashtra State Onion Producers Farmers Association (MSOPFA)** has launched an **indefinite protest**, demanding **immediate financial assistance, free seeds, and long-term policy support** from the State government.

- According to the **India Meteorological Department (IMD)**, rainfall ranged between **36.8 mm (Solapur)** and **58.4 mm (Nashik)** — unusual for the **post-monsoon (rabi preparation)** period.

2. Impact on Agriculture and Economy

- The **unseasonal rains** have severely damaged **onion nurseries**, crucial for the **rabi sowing cycle (October–December)**.

- Other crops such as **soybean, maize, and cotton** have also suffered losses, worsening the **agrarian distress**.

- Farmers already facing **high input costs, market volatility, and low remunerative prices** are now burdened with **crop loss** — threatening their **livelihood security**.

- Maharashtra contributes **over 40% of India's onion production**, producing **around 170 lakh metric tons in 2025** (up from 86 lakh MT in 2024). Any disruption can trigger a **national supply and price crisis**.

3. Legal, Policy, and Institutional Framework

- **Disaster relief and compensation** for crop losses are governed by the **State Disaster Response Fund (SDRF)** and **National Disaster Response Fund (NDRF)** under the **Disaster Management Act, 2005**.

- **Crop insurance** is available under the **Pradhan Mantri Fasal Bima Yojana (PMFBY)**, which provides compensation for yield losses due to natural calamities.

- The **Centre and State governments** share responsibility for **agricultural disaster management and market stabilization** under the **Seventh Schedule (List II & List III)** of the **Constitution**.

- Relief measures may also involve **input subsidies**, **interest-free loans**, and **price stabilization mechanisms** through **Nafed** or other agencies.

4. Broader Implications and Concerns

- **Climate change-induced weather variability** is increasingly affecting India's **agricultural cycles**, especially sensitive crops like onions that have **low resilience to excess moisture**.

- Disruptions in **rabi sowing** can lead to a **collapse in the January–April harvest window**, resulting in **price spikes and food inflation**.

- The event exposes the **need for adaptive crop planning**, **climate-resilient seeds**, and **robust early warning systems** for farmers.

- Experts stress the need for **strengthened rural infrastructure**, **irrigation management**, and **real-time crop loss assessment using satellite data** for faster relief delivery.

5. Definition (Key Term)

- **Unseasonal Rainfall:** Precipitation that occurs outside the normal monsoon or seasonal patterns, often leading to **crop loss**, **soil damage**, and **post-harvest spoilage**, disrupting agricultural schedules.

- **Rabi Crops:** Crops sown in **winter (October–December)** and harvested in **spring (March–April)**, such as **wheat, barley, mustard, and onions**.

6. Conclusion and UPSC Relevance

- The ongoing onion crisis in Maharashtra highlights the **vulnerability of Indian agriculture to climate anomalies**, inadequate **risk mitigation mechanisms**, and **governance gaps** in prompt relief distribution.

- It calls for **integrated climate-resilient agricultural planning**, improved **disaster response capacity**, and **federal coordination** between Centre and State for timely farmer support.

- **UPSC Relevance:**

  o **GS Paper 1:** Impact of climate change and geographical factors on agriculture.

  o **GS Paper 2:** Centre-State relations; disaster management policies.

  o **GS Paper 3:** Issues related to agriculture, buffer stock management, and food security.

  o **GS Paper 4:** Ethical governance and responsiveness to farmer distress.

In Essence:
The Maharashtra onion crisis is a **climate-agriculture-governance intersection**, underscoring the urgent need for **climate-resilient policies**, **timely compensation frameworks**, and **institutional empathy** towards farmers' rights and livelihoods.

4. Rising Stubble Burning in Punjab – Environmental, Legal, and Governance Dimensions

1. Background and Current Situation

- Punjab recorded **743 stubble-burning incidents** between **September 15 and October 26, 2025**, marking a worrying **spike of 122 cases in a single day** — the **highest single-day rise** this season.

- The **Punjab Pollution Control Board (PPCB)** reported that **Tarn Taran and Amritsar** districts accounted for the **majority of cases**, despite repeated appeals from the State government to avoid burning crop residue.

- From **October 20 to 26**, the number of cases rose sharply from **353 to 743**, indicating non-compliance with anti-burning directives.

2. Data and Geographic Spread

- **District-wise cases:** Tarn Taran (224), Amritsar (154), Ferozepur (80), Sangrur (47), Patiala (39), Gurdaspur (38), and Kapurthala (29).

- Punjab's **total paddy area** stands at **31.72 lakh hectares**, out of which **56.5% has been harvested** as of October 26, 2025.

- The PPCB imposed **₹16.8 lakh in fines** as **environmental compensation** in **329 cases**, collecting about **₹12 lakh** so far.

3. Legal and Administrative Measures

- **FIRs (266)** have been registered under **Section 223 of the Bharatiya Nyaya Sanhita (BNS)**, which penalizes **disobedience of public servant orders**.

- **'Red entries'** have been marked in **296 land records**, barring defaulting farmers from **availing loans or selling their land** — a significant administrative deterrent.

- Stubble burning is prohibited under the **Air (Prevention and Control of Pollution) Act, 1981**, and is a violation of **National Green Tribunal (NGT)** and **Supreme Court directives**.

- The **Commission for Air Quality Management (CAQM)** under the **Environment (Protection) Act, 1986**, monitors and directs enforcement actions across Punjab, Haryana, and Delhi NCR.

4. Environmental and Policy Implications

- **Stubble burning** is a major cause of **air pollution and smog** in **Delhi-NCR**, leading to severe **public health and environmental degradation**.

- The burning releases **PM2.5, CO_2, and methane**, contributing to **global warming** and **air quality index deterioration**.

- Despite awareness campaigns, farmers cite **economic constraints, lack of machinery (Happy Seeder, Super SMS)**, and **tight harvesting windows** as reasons for continued burning.

- The government promotes **alternative measures** such as **in-situ residue management**, **use of bio-decomposers**, and **financial incentives** under the **Crop Residue Management Scheme (2018)**.

5. Definition (Key Terms)

- **Stubble Burning:** The practice of setting fire to leftover straw and crop residue in fields after harvesting to clear land for the next sowing cycle.

- **Red Entry:** An administrative mark in a farmer's land record indicating violation of government orders, which restricts the farmer's ability to **sell, mortgage, or access credit** against that land.

6. Constitutional and Governance Aspects

- **Article 48A (Directive Principles):** The State must protect and improve the environment.

- **Article 51A(g):** It is the duty of every citizen to protect the natural environment.

- The issue exemplifies the challenge of **cooperative federalism**, as pollution from one State affects neighboring regions, necessitating **inter-state coordination**.

- The **judiciary's proactive role** through the **NGT and Supreme Court** has been key in holding States accountable for air pollution control.

7. Conclusion and UPSC Relevance

- The rise in stubble burning cases in Punjab despite legal and administrative deterrents reveals the **gap between policy intent and ground-level implementation**.

- A **holistic approach** combining **technological support, financial assistance, and behavioral change** is essential to resolve this **environment-agriculture conflict**.

- **UPSC Relevance:**

  o **GS Paper 3:** Environmental pollution, conservation, and agricultural practices.

  o **GS Paper 2:** Governance, implementation of laws, inter-state relations, and judicial oversight.

  o **GS Paper 4:** Ethical responsibility of governance towards environmental protection and sustainable development.

In Essence:
The stubble burning crisis in Punjab underscores the **complex interplay between agricultural livelihoods and environmental sustainability**, calling for **scientific, economic, and institutional solutions** to protect both **farmers' welfare and India's ecological balance**.

5. Cyclone Montha – Preparedness and Response Measures in Andhra Pradesh (Kakinada and Coastal Districts)

1. Background and Current Situation

- The **Andhra Pradesh government** has undertaken extensive measures as **Cyclone Montha** churns the **Bay of Bengal**, posing a threat to the coastal districts, particularly **Kakinada, Uppada, and Dr. B.R. Ambedkar Konaseema**.

- As of Monday, **over 600 mechanised boats** have safely returned to the shore, while **nearly 10,000 coastal residents** are being **evacuated** as a precaution.

- The cyclone brought **strong winds, heavy rainfall, and rising sea levels**, resulting in **coastal erosion and potential flooding** threats along the **Kakinada-Uppada belt**.

2. Relief and Evacuation Measures

- **269 relief camps** have been set up in Kakinada district and **120 camps** in Konaseema district, equipped with **food, water, and essential commodities** for a week.

- **142 pregnant women** in Kakinada and **126 in Konaseema**, expected to deliver soon, have been shifted to **government hospitals** for safety and continuous medical care.

- **14,500 inmates of welfare hostels** have been sent home as a preventive step.

- **23 ambulances** and dedicated **medical teams** are on standby at **Pithapuram and Tallarevu primary health centres** for emergency response.

3. Disaster Management and Administrative Response

- **Special teams** have been mobilised in **Uppada, Kothapalli, Tallarevu, Thondangi**, and **Kakinada Rural areas** to tackle **coastal erosion and flooding**.

- **National Disaster Response Force (NDRF)** and **State Disaster Response Force (SDRF)** teams (two each) are deployed for **rescue and relief operations**.

- The **Electricity Department** has deployed **100 personnel** from Rayalaseema region for **power restoration** in affected areas.

- **269 relief camps** are being supported by NGOs such as **Alluri Sitarama Raju Foundation** and **Akshaya Foundation**, providing **10,000 food packets** daily.

4. Preventive and Infrastructural Measures

- **Hoardings** along **400 km of State highways** and **60 km of National Highway 216** are being removed to prevent accidents during high winds.

- The **Irrigation Department** has been instructed **not to release Godavari water into canals** to avoid inundation of standing paddy crops.

- The **police** are monitoring the **Kakinada-Uppada coastal road**, which faces a **risk of submergence** from rising sea levels.

- Fishermen have been **advised to stay ashore**, and farmers have been **warned against working in fields** during the storm.

5. Legal, Institutional, and Constitutional Framework

- Cyclone preparedness and response are governed under the **Disaster Management Act, 2005**, which mandates coordination between **National, State, and District Disaster Management Authorities (NDMA, SDMA, DDMA)**.

- **Article 48A (Directive Principles)** and **Article 51A(g)** of the **Constitution of India** emphasize the **State and citizens' duty to protect the environment and safeguard against natural calamities**.

- The **NDMA Guidelines on Cyclone Management (2008)** outline evacuation planning, early warning dissemination, and community participation mechanisms.

- Coordination among agencies such as the **IMD**, **Indian Coast Guard**, and **local administrations** ensures real-time tracking, warnings, and rescue readiness.

6. Definition (Key Term)

- **Cyclone:** A large-scale air mass system that rotates around a strong center of low atmospheric pressure, bringing **heavy rain, storm surges, and destructive winds**. In the Indian Ocean, tropical cyclones are categorized by **wind speed and storm intensity**.

7. Conclusion and UPSC Relevance

- The proactive evacuation, relief, and coordination efforts in Andhra Pradesh reflect **effective disaster preparedness**, aligning with the **Sendai Framework for Disaster Risk Reduction (2015–2030)**.

- The government's pre-emptive steps—especially evacuation of vulnerable groups like **pregnant women and hostel inmates**—highlight **human-centric disaster management**.

- **UPSC Relevance:**

  o **GS Paper 1:** Geophysical phenomena – cyclones and their impact on India's coastal regions.

  o **GS Paper 2:** Disaster management institutions, governance mechanisms, and Centre-State coordination.

  o **GS Paper 3:** Disaster resilience, environmental sustainability, and risk mitigation strategies.

  o **GS Paper 4:** Ethical governance and compassion in administrative decision-making during crises.

In Essence:

The response to Cyclone Montha showcases India's evolving **disaster preparedness framework**, emphasizing **early evacuation, inter-agency coordination, and community safety**, serving as a model for **resilient coastal governance** in the face of increasing climate-related hazards.

6. Big Tech's Violation of India's Drug Advertisement Laws – A Public Health and Regulatory Challenge

1. Background and Historical Context

- The issue of **misleading drug advertisements** in India dates back to **1927**, when the Council of State first discussed the need to control the "craze for medicinal drugs."

- To address this, the **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 (DMRA)** was enacted to **prohibit advertisements of drugs claiming false therapeutic effects**.

- The DMRA bans advertisements for **54 specific medical conditions** (e.g., diabetes, cancer, sexual disorders) irrespective of whether the drug is approved or clinically tested.

CHALTA HAI REGULATION
DINESH THAKUR & PRASHANT REDDY T

- The intent was to **protect public health** by preventing false claims that exploit vulnerable consumers seeking cures for chronic or incurable diseases.

2. The Problem of Internet-Based Drug Advertising

- The rise of **Big Tech platforms**—including **search engines, social media, and e-commerce websites**—has transformed global advertising, making it harder for governments to monitor compliance.

- These platforms routinely **publish misleading advertisements** for **ayurvedic, herbal, or homeopathic products** claiming to cure serious diseases such as **diabetes, blood pressure, or cancer**, in **violation of the DMRA**.

- Ironically, these same platforms enforce **strict health advertisement policies** in the **United States**, pre-screening ads and disallowing unverified therapeutic claims under U.S. laws.

- This indicates **double standards** and a **disregard for Indian laws and consumers**, exposing gaps in **digital regulation and enforcement**.

3. Legal and Constitutional Provisions

- **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954:** Prohibits advertisements of drugs for specific diseases and penalizes misleading claims.

- **Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 (PNDT):** Prohibits sex-selection advertising; Big Tech had earlier violated this law as well.

- **Information Technology Act, 2000 (Section 79):** Grants conditional **"intermediary immunity"** to digital platforms from user-generated content, provided they act on violations when notified.

- However, **advertisements** are **not user-generated content**—Big Tech **actively promotes and profits** from them, making these platforms **publishers**, not intermediaries.

- **Article 21 (Right to Life)** and **Article 47 (Directive Principle)** impose a constitutional obligation on the State to **protect public health and regulate harmful commercial practices**.

4. Causes of Regulatory Failure

- **Weak enforcement** of existing laws, as seen in the **PNDT case (2008)**, where despite PILs and Supreme Court intervention, **no criminal prosecutions** were initiated.

- **Jurisdictional challenges:** Indian subsidiaries claim they are separate entities from parent companies based in the U.S., shielding key executives from prosecution.

- **Regulatory inertia** and lack of technological oversight mechanisms to monitor online content in real time.

- **Economic dependency** on digital advertising revenues often discourages aggressive regulation of Big Tech firms.

5. Need for Reforms and Way Forward

- India must establish **robust digital advertising regulations** and make **key managerial personnel** of tech platforms **legally accountable within Indian jurisdiction**.

- The government should **revoke intermediary immunity** for platforms that fail to comply with Indian public health laws.

- Introduce **mandatory pre-screening mechanisms** for health-related advertisements, similar to those in the U.S. and EU.

- Strengthen coordination between the **Central Drugs Standard Control Organisation (CDSCO)**, **Ministry of Health**, and **Information & Broadcasting Ministry** for digital oversight.

- Promote **media literacy and consumer awareness** to combat misinformation about "miracle cures."

6. Definition (Key Terms)

- **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954:** A central law that prohibits false, misleading, or magical claims in advertisements relating to the treatment or prevention of certain diseases or conditions.

- **Intermediary:** An entity that facilitates access to information or communication online without altering or creating the content; distinct from a "publisher," which curates or profits from the content.

7. Conclusion and UPSC Relevance

- The unchecked spread of **misleading medical advertisements** on Big Tech platforms undermines **public health, consumer rights, and the rule of law** in India.

- Ensuring compliance with Indian laws requires **digital sovereignty**, **corporate accountability**, and **judicial vigilance**.

- India must adopt a **21st-century regulatory framework** to make global digital companies **answerable to Indian legal authority**.

- **UPSC Relevance:**

    o **GS Paper 2:** Government policies and regulatory frameworks; accountability of Big Tech; Centre-State relations in digital governance.

    o **GS Paper 3:** Issues related to health, science & tech regulation, and public safety.

    o **GS Paper 4:** Ethics in corporate governance, consumer protection, and public accountability.

In Essence:
The continued violation of the **Drugs and Magic Remedies Act** by Big Tech reflects a **critical regulatory blind spot** in India's digital ecosystem. Enforcing **legal accountability, tightening intermediary immunity, and prioritizing public health over profit** are essential steps toward safeguarding citizens in the age of digital misinformation.

7. India–EU Linkage of Carbon Markets under the New Strategic Agenda 2025 – Opportunities and Challenges

1. Background and Context

- On **September 17, 2025**, the **European Union (EU)** and **India** unveiled the **New Strategic EU–India Agenda**, a comprehensive framework to enhance cooperation across **five pillars**: (i) Prosperity and Sustainability, (ii) Technology and Innovation, (iii) Security and Defence, (iv) Connectivity and Global Issues, and (v) Enablers Across Pillars.

- A key breakthrough under the **Clean Transition** section is the proposal to **link India's Carbon Market (ICM)** with the **EU's Carbon Border Adjustment Mechanism (CBAM)**.

INDIA–EU LINKAGE OF CARBON MARKETS
UNDER THE NEW STRATEGIC AGENDA 2025 - OPPORTUNITIES AND CHALLENGES

- This linkage means that **carbon prices paid by Indian exporters** domestically could be **deducted from the CBAM levy** imposed by the EU at its borders, thereby **preventing double taxation** on carbon-intensive exports.

2. Understanding the Mechanisms: ICM and CBAM

- **Indian Carbon Market (ICM):** Based on India's **Carbon Credit Trading Scheme (CCTS)**, it allows industries to earn and trade carbon credits by reducing emissions. It is still in its formative phase, with credits primarily based on **intensity improvements** and **project offsets**, not absolute emission caps.

- **EU's CBAM (Carbon Border Adjustment Mechanism):** A trade-related climate tool that **levies a carbon price** on imports from countries without comparable carbon pricing. It covers sectors like steel, aluminium, cement, fertilisers, and electricity.

- Linking both systems would require **credible, measurable, and verifiable emission reductions** on a **tonne-for-tonne** basis to ensure **mutual recognition**.

3. Key Challenges in Implementation

- **Institutional Weakness:** India lacks an independent regulator or emissions registry equivalent to the **EU's Emissions Trading System (ETS)**, which has two decades of experience and strong enforcement mechanisms.

- **Price Gap:** EU carbon prices range between **€60–€80/tonne**, while Indian carbon credits currently range from **€5–€10/tonne**, making equivalence and deduction difficult.

- **Policy and Legal Risks:** Without binding caps or strict penalties, **EU regulators may treat Indian credits as "non-compliance grade"**, refusing to deduct them under CBAM.

- **Domestic Political Resistance:** Indian industries could oppose the "**double burden**" of domestic compliance costs plus residual CBAM levies, potentially weakening the ICM's enforcement.

4. Legal, Economic, and Sovereignty Issues

- **Legal Dimension:** The CBAM's unilateral nature has been criticized by developing countries, including India, at the **WTO**, as **protectionist and trade-distorting**.

- **Sovereignty Concerns:** Linking ICM and CBAM gives **Brussels an indirect influence** over India's domestic carbon pricing, raising questions about **policy autonomy**.

- **Trade Law Tensions:** If the EU deems India's carbon price "insufficient," it may still impose CBAM charges, leading to **diplomatic or legal disputes** under WTO frameworks.

- **Constitutional Backing (India):** Article **253** empowers Parliament to make laws for implementing international agreements; **Article 48A** (Directive Principles) and **Article 51A(g)** (Fundamental Duties) reinforce India's commitment to **environmental protection and sustainability**.

5. Potential Opportunities and the Way Forward

- If successfully implemented, the linkage could:

  o **Protect Indian exporters** from double taxation under CBAM.

  o **Accelerate industrial decarbonisation** by incentivising low-carbon production.

  o **Enhance North–South cooperation** on climate finance and carbon markets.

- India must:

  o Establish a **robust, transparent carbon market architecture** with enforceable emission caps.

- o Set a **realistic carbon price floor** and ensure sectoral alignment.

- o Build **institutional equivalence** with the EU's ETS through independent verification and reporting.

- o Negotiate a **clear legal framework** for carbon credit recognition and CBAM deduction.

6. Definition (Key Terms)

- **Carbon Border Adjustment Mechanism (CBAM):** An EU policy instrument imposing a carbon price on imports from countries with lower or no carbon pricing, to prevent "carbon leakage" and encourage global emission reductions.

- **Carbon Credit Trading Scheme (CCTS):** India's market-based mechanism allowing industries to trade carbon credits earned through emission reductions, promoting cost-effective decarbonisation.

7. Conclusion and UPSC Relevance

- The India–EU carbon market linkage marks a **historic step in climate diplomacy**, aiming to balance **trade competitiveness and sustainability**.

- However, without structural reforms in India's carbon market, **technical gaps, political resistance, and sovereignty concerns** could hinder progress.

- A cooperative, transparent, and mutually respectful framework is essential for real success.

- **UPSC Relevance:**

  - o **GS Paper 2:** India–EU relations; International environmental governance; WTO and trade policy.

  - o **GS Paper 3:** Climate change mitigation, environmental economics, sustainable industrial policy.

  - o **GS Paper 4:** Ethics in environmental stewardship and global cooperation.

In Essence:
The proposed linkage between the **Indian Carbon Market and the EU's CBAM** is a landmark opportunity for **climate and trade synergy**, but it demands **institutional credibility, legal alignment, and political will** to ensure that sustainability and sovereignty move hand in hand in India's climate policy architecture.

8. Linguistic Decline and Cultural Identity – The Case of Dogri Language in Jammu Region
1. Background and Context

- India, known for its **linguistic diversity**, is facing a **severe crisis of language extinction**. According to **UNESCO**, India tops the list of countries with the **maximum number of endangered dialects**, having **lost over 220 languages in the past 50 years**.

- The **Dogri language**, spoken primarily in the **Jammu region**, is among those witnessing a rapid decline due to **globalisation, migration, urbanisation**, and **policy neglect**.

- Although **Dogri was recognised as an official language** under the **Jammu & Kashmir Official Languages Act, 2020**, its practical usage in **education, administration, and media** remains negligible.

2. Causes for the Decline of Dogri

- **Policy Neglect:** Dogri received **constitutional recognition in 2003** (Eighth Schedule), much later than other regional languages. Lack of institutional support has limited its inclusion in **school curricula, government communication, and public broadcasting**.

- **Generational Shift:** Younger generations show a **steep decline in proficiency**. Survey data indicates **0% reading and writing proficiency** among those under 20, compared to **full fluency among those aged 60+**.

- **Rural–Urban Divide:** Around **56% of rural respondents** actively speak Dogri, compared to **45% in urban areas**. Writing proficiency stands at **15% in rural** and **4% in urban areas**, showing how urbanisation and migration have weakened linguistic roots.

- **Economic Irrelevance:** About **43.2% of respondents** felt Dogri has **no career or employment relevance**, pushing people toward English or Hindi for upward mobility.

3. Constitutional and Legal Framework

- **Article 29(1)** of the Indian Constitution protects the **right of any section of citizens to conserve its distinct language, script, or culture**.

- **Article 350A** directs the State to provide **instruction in the mother tongue** at the primary stage of education.

LINGUISTIC DECLINE AND CULTURAL IDENTITY
THE CASE OF DOGRI LANGUAGE IN JAMMU REGION

- Dogri's inclusion in the **Eighth Schedule (via the 92nd Constitutional Amendment Act, 2003)** grants it recognition for use in Parliament, government examinations, and official communications.

- Despite such provisions, **implementation gaps** and lack of **institutional backing** have hindered Dogri's practical preservation.

4. Broader Linguistic and Cultural Implications

- The decline of Dogri reflects a **larger linguistic erosion** occurring across India, where regional languages are losing ground to **dominant or global languages**.

- This trend threatens **India's intangible cultural heritage**, affecting local traditions, folklore, and oral histories.

- The **2021 Census delay** has further obstructed updated linguistic data, impeding **targeted policy interventions** for endangered languages.

- The **decolonisation of language perception**—viewing English not as the only language of progress—is essential for reviving linguistic pride and inclusivity.

5. The Way Forward

- **Policy Integration:** Include Dogri and other regional languages in **school curricula**, **public administration**, and **official signage** to normalise their use.

- **Technological Inclusion:** Develop **digital content, translation tools, and AI-based linguistic preservation projects** in endangered languages.

- **Community Involvement:** Encourage **local media, cultural festivals, and youth-driven movements** to promote the speaking and teaching of Dogri.

- **Institutional Support:** Establish a **Dogri Language Promotion Board** under the Ministry of Education or Culture to standardise usage and script.

- **Cultural Diplomacy:** Leverage UNESCO's **Intangible Cultural Heritage framework** for safeguarding regional linguistic traditions.

6. Definition (Key Terms)

- **Endangered Language:** A language at risk of falling out of use as its speakers shift to another language; when the last native speakers die, it becomes extinct.

- **Linguistic Heritage:** The collective body of languages and dialects that form part of a community's cultural identity, history, and oral tradition.

7. Conclusion and UPSC Relevance

- The decline of Dogri mirrors the **broader crisis of India's linguistic diversity**, threatening cultural pluralism and identity preservation.

- Reviving endangered languages requires a **multi-level strategy** combining **policy action, education, technology, and community engagement**.

- **UPSC Relevance:**

  o **GS Paper 1:** Indian culture, linguistic diversity, and regional identities.

  o **GS Paper 2:** Government policies for education and cultural preservation.

  o **GS Paper 4:** Ethical responsibility in safeguarding intangible heritage and promoting inclusivity.

In Essence:

The fading voice of Dogri is not merely a linguistic loss but a **cultural erosion**. Preserving India's linguistic diversity is essential to protecting its **civilisational ethos**, ensuring that development does not come at the cost of **identity, heritage, and pluralism**.

9. The Complex Dynamics of U.S.–Pakistan Relations and Its Strategic Implications for India

1. Background and Historical Context

- Since **Partition (1947)**, Pakistan's **security establishment** has shaped its policies around **India-centric threats**, relying on external alliances to balance its weaknesses.

- Initially aligned with the **United States during the Cold War**, Pakistan became a key partner in **anti-Communist operations**, later shifting toward **China** as relations with the U.S. fluctuated.

- The **U.S.–Pakistan relationship** has oscillated between close cooperation and deep mistrust, largely driven by **short-term strategic calculations** rather than enduring shared values.

2. Phases of the U.S.–Pakistan Relationship

- **Cold War Era (1950s–1970s):** Pakistan joined **SEATO (1954)** and **CENTO**, allowing the **CIA** to use its bases to monitor Soviet activity. It was then described as **"America's most allied ally in Asia."** However, the **1965**

war and the **1971 Bangladesh crisis** exposed U.S. neutrality and triggered disillusionment in Islamabad.

- **Afghan Jihad Period (1979–1990s):** Following the **Soviet invasion of Afghanistan**, Pakistan, under **Zia-ul-Haq**, became the **frontline state** for U.S. operations, receiving over **$5 billion in aid**. However, after Soviet withdrawal, sanctions under the **Pressler Amendment (1990)** were imposed, straining ties.

- **Post-9/11 Period (2001–2011):** Pakistan joined the **U.S.-led War on Terror**, receiving about **$18 billion in aid**, including F-16s. Yet, **Osama bin Laden's presence in Abbottabad (2011)** cemented U.S. mistrust.

- **Contemporary Period (2018–2025):** Relations saw renewed fluctuations—Trump's earlier criticism in 2018 gave way to **re-engagement with Pakistan's military** in 2025 amid new **rare-earth mineral deals** and **geo-economic interests**.

3. Persistent Contradictions and Mutual Distrust

- **U.S. Perspective:** Pakistan is viewed as a **duplicitous partner**, aiding militant groups while seeking U.S. aid. Repeated **sanctions** under laws such as the **Symington (1977)** and **Pressler (1990)** Amendments reveal Washington's frustration with Pakistan's **strategic ambiguity**.

- **Pakistan's Perspective:** Islamabad perceives the U.S. as an **unreliable ally** that abandons it after achieving short-term goals. Consequently, Pakistan has sought **strategic depth through China**, notably via the **China–Pakistan Economic Corridor (CPEC)**.

- The relationship embodies what former Pakistani diplomat **Hussain Haqqani** calls a "**magnificent delusion**" — a partnership of necessity, not trust.

4. China Factor and Strategic Implications for India

- Pakistan's **deepening strategic and military cooperation with China**, including **nuclear and defence assistance**, presents a **dual-front security challenge** for India.

- China's influence through **CPEC** and investments in **Gwadar Port** enhances its footprint in the Indian Ocean, complicating India's maritime strategy.

- The **U.S. engagement with Pakistan's military leadership**—despite India's growing strategic partnership with Washington under **QUAD and I2U2 frameworks**—adds complexity to India's regional calculus.

- For India, these dynamics reaffirm the importance of **strategic autonomy**, **neighbourhood diplomacy**, and **deepened U.S.–India defence cooperation** under frameworks like **COMCASA, BECA, and LEMOA**.

5. Legal and Constitutional Frameworks in Foreign Policy Context

- Under **Article 51** of the Indian Constitution, India aims to promote **international peace and friendly relations among nations**, guiding its foreign policy conduct.

- The **allocation of foreign affairs** falls under **List I (Union List)**, giving Parliament exclusive authority over **diplomatic and defence policies**.

- International relations are shaped within the framework of **non-alignment**, now evolved into **multi-alignment**, allowing India to balance ties with both the U.S. and other major powers while safeguarding national interests.

6. Definition (Key Terms)

- **Pressler Amendment (1990):** U.S. law that halted military aid to Pakistan unless the President certified that Islamabad did not possess nuclear weapons.

- **China–Pakistan Economic Corridor (CPEC):** A flagship project under China's **Belt and Road Initiative (BRI)** connecting Gwadar Port to Xinjiang, enhancing China's strategic access to the Arabian Sea.

- **Strategic Autonomy:** India's foreign policy principle of maintaining independence in decision-making without aligning exclusively with any major power bloc.

7. Conclusion and UPSC Relevance

- The **U.S.–Pakistan relationship** remains defined by **strategic convenience, recurring mistrust, and shifting global priorities**.

- While Washington values Pakistan for **counterterrorism and regional stability**, Islamabad continues leveraging the U.S. for **aid and legitimacy** while aligning with **China for strategic security**.

- For India, these developments demand a **calibrated foreign policy**, focusing on **strengthening regional diplomacy, internal security preparedness, and Indo–U.S. strategic convergence**.

- **UPSC Relevance:**

  o **GS Paper 2:** India's neighbourhood relations, foreign policy, and India–U.S.–Pakistan triangle.

  o **GS Paper 3:** Internal and external security challenges; China's strategic role in South Asia.

  o **GS Paper 4:** Ethical dimensions in international relations and diplomacy.

In Essence:
The evolution of **U.S.–Pakistan ties** underscores the **fragility of alliances based on short-term strategic convenience**. For India, navigating this volatile triangle through **strategic foresight, regional engagement, and defence preparedness** remains central to preserving its **sovereignty and regional balance of power**.

10. India's Maritime Vision and the Great Nicobar Project – Towards Global Trade Leadership

1. Background and Context

- At the **India Maritime Week 2025**, Union Home Minister **Amit Shah** announced India's aim to become one of the **top five ship-building nations** and significantly enhance **port-handling capacity** from **2,700 million tonnes per annum (MTPA)** to **10,000 MTPA**.

THE CRITIC IS AT SEA
RAM MADHAV

- The centrepiece of this ambition is the **$5-billion Great Nicobar Island project**, which includes a **transshipment port**, **power plant**, and **airport**, designed to position India as a major maritime hub in the **Indo-Pacific region**.

- However, the project faces criticism from **environmental groups** and **local communities** for potential **ecological damage** and **violation of forest rights**.
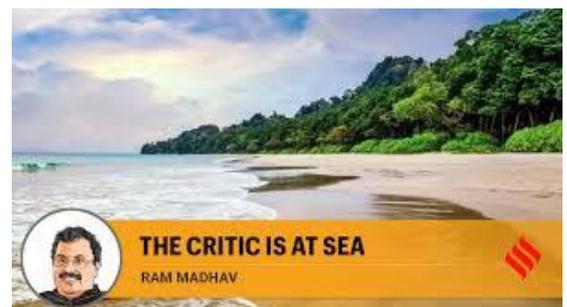
2. India's Maritime Strength and Strategic Significance

- India's **11,500 km coastline**, spread across **13 coastal States and Union Territories**, gives it a **strategic maritime advantage**.

- The **maritime sector contributes nearly 60% to India's GDP**, directly or indirectly, through trade, shipping, fisheries, and coastal development.

- The **Indo-Pacific region**, covering vital sea lanes like the **Malacca Strait**, is central to global trade, energy supply routes, and India's **Blue Economy strategy**.

- The Great Nicobar project aims to create an **alternative transshipment hub** to Singapore and Colombo, strengthening India's **geo-economic influence** and **trade resilience**.

3. Key Government Initiatives and Goals

- The **Sagarmala Programme** seeks to modernize ports, improve coastal infrastructure, and integrate **port-led industrialisation**.

- Under **Maritime India Vision 2030**, India targets:

    o A **tenfold increase** in cargo handling capacity.

    o **Reduction in logistics costs** from 16% to **single digits (9%)**, as highlighted by Union Minister **Nitin Gadkari**.

    o Promotion of **shipbuilding**, **repair**, and **inland waterways** for sustainable growth.

- **680 MoUs worth ₹10 lakh crore** are expected to be signed during India Maritime Week, reflecting robust **public-private participation** in the sector.

4. Legal, Environmental, and Constitutional Dimensions

- **Environmental Concerns:** The Great Nicobar project falls within the **Great Nicobar Biosphere Reserve**, raising issues under the **Forest Conservation Act, 1980**, and the **Environmental Protection Act, 1986**.

- **Forest Rights Act, 2006:** Local tribal communities claim violation of their **rights over forest land** and traditional habitats.

- **Coastal Regulation Zone (CRZ) Notification, 2019:** Regulates developmental activities along India's coastlines to ensure ecological sustainability.

- **Constitutional Provisions:**

    o **Article 48A (Directive Principles):** Mandates the State to protect and improve the environment.

    o **Article 51A(g):** Imposes a duty on citizens to protect the natural environment.

    o **Article 297:** Vests ownership of maritime resources (territorial waters, seabed, continental shelf) in the Union of India.

5. Strategic and Global Implications

- The project enhances India's role as a **"bridge between the Indo-Pacific and the Global South"**, aligning with its **Act East Policy** and **Indo-Pacific Oceans Initiative (IPOI)**.

- Strengthens **maritime diplomacy** under the **Security and Growth for All in the Region (SAGAR)** doctrine.

- Helps reduce dependence on foreign transshipment ports, boosting **self-reliance (Atmanirbhar Bharat)** in maritime logistics.

- Promotes India's participation in **sustainable shipping and green ports**, aligning with global environmental commitments under the **Paris Agreement** and **IMO decarbonisation goals**.

6. Definition (Key Terms)

- **Transshipment Port:** A port where cargo is transferred from one vessel to another for onward shipment, often serving as a key international logistics hub.

- **Blue Economy:** Sustainable use of ocean resources for economic growth, improved livelihoods, and ocean ecosystem health.

- **Indo-Pacific:** A strategic geopolitical and economic region linking the Indian Ocean with the western and central Pacific Ocean, critical for global trade and security.

7. Conclusion and UPSC Relevance

- The **Great Nicobar project** reflects India's ambition to transform into a **global maritime power**, leveraging its geographic advantage for trade, connectivity, and strategic influence.

- However, the challenge lies in balancing **economic development** with **ecological sustainability** and **tribal rights protection**.

- **UPSC Relevance:**

  o **GS Paper 2:** India's foreign policy, regional cooperation, and maritime diplomacy.

  o **GS Paper 3:** Infrastructure development, environmental conservation, and blue economy.

  o **GS Paper 4:** Ethics in sustainable development and balancing growth with environmental justice.

In Essence:

The proposed **Great Nicobar project** symbolizes India's **maritime resurgence and Indo-Pacific leadership**, but its success will depend on ensuring **inclusive development, environmental compliance, and strategic foresight**—a true test of India's vision for a sustainable maritime future.

11. India's Stand on Global Conflicts and Strategic Stability – Gaza Peace Plan and Ukraine War

1. Background and Context

- At the **20th East Asia Summit in Kuala Lumpur (October 2025)**, External Affairs Minister **Dr. S. Jaishankar** reiterated India's consistent position on global conflicts, calling for an **early end to the Russia–Ukraine war** and **supporting the Gaza peace initiative** proposed by **U.S. President Donald Trump**.

- India's stance reflects its emphasis on **peace, dialogue, and diplomacy** as essential tools for resolving international crises.

- These conflicts, according to Jaishankar, have serious implications for **global food security, energy supply, and trade flows**, directly affecting developing nations like India.

2. India's Position on Ongoing Conflicts

- **Gaza Peace Plan:** India **welcomed the U.S.-led peace initiative** for Gaza, aligning with its historical support for a **two-state solution** ensuring peace and stability between **Israel and Palestine**.

- **Ukraine Conflict:** India maintained its **neutral but principled position**, calling for **an early cessation of hostilities** and advocating for a **rules-based international order** while safeguarding its own energy and security interests.

- India's approach is guided by **strategic autonomy**, balancing relations with major powers—**Russia, the U.S., and the EU**—amid evolving global alignments.

3. Economic and Strategic Implications

- **Energy Security:** Jaishankar highlighted that ongoing conflicts have **restricted energy trade** and created **market distortions**, particularly due to **U.S. sanctions on Russian crude**, which have indirectly affected India's energy imports.

- **Food Security:** Both the Ukraine war (impacting grain exports) and the Middle East crisis (impacting oil supply) have disrupted **global supply chains**, posing risks to **developing economies**.

- **Trade and Maritime Security:** India emphasized strengthening **maritime cooperation with ASEAN countries** to ensure **safe sea lanes**, enhance **supply chain resilience**, and protect the **freedom of navigation** in the Indo-Pacific.

4. Legal, Diplomatic, and Constitutional Dimensions

- **India's Foreign Policy Principles:** Guided by **Article 51** of the Constitution, which directs the State to promote **international peace, just relations, and respect for international law**.

- **UN Charter Alignment:** India's stance is consistent with the **UN Charter principles** of sovereignty, non-interference, and peaceful resolution of disputes.

- **NAM and Strategic Autonomy Legacy:** India's position continues the tradition of **non-alignment**, now reshaped as **"multi-alignment"**, allowing engagement with diverse partners without bloc politics.

- **Maritime Cooperation:** India's engagement with ASEAN aligns with its **Act East Policy** and **Indo-Pacific Oceans Initiative (IPOI)**, aiming for a free, open, and inclusive Indo-Pacific.

5. Broader Geopolitical Significance

- The **U.S.–India friction** over energy imports from Russia underscores the challenge of **balancing national interests with global expectations**.

- India's consistent call for **multipolarity** underlines its vision of an **equitable global order**, where emerging powers in the **Global South** play a more active role in peace and development.

- India's focus on **supply chain diversification, resilient logistics, and maritime partnerships** reinforces its role as a **stabilising power in the Indo-Pacific**.

6. Definition (Key Terms)

- **Two-State Solution:** A proposed resolution to the Israel-Palestine conflict envisioning an independent Palestinian state coexisting peacefully alongside Israel.

- **Multipolarity:** A global order where power is distributed among multiple states rather than dominated by one or two superpowers.

- **Strategic Autonomy:** The ability of a state to make independent foreign policy decisions that align with its national interests without external pressure.

7. Conclusion and UPSC Relevance

- India's nuanced position on both the **Gaza crisis** and the **Ukraine war** underscores its pragmatic diplomacy rooted in **peaceful coexistence, global stability, and economic security**.

- By promoting **maritime cooperation**, **resilient supply chains**, and **multilateral dialogue**, India reinforces its role as a **responsible global stakeholder** and a bridge between the **Global North and South**.

- **UPSC Relevance:**

  - **GS Paper 2:** India's foreign policy, bilateral and multilateral relations, diplomacy in global conflicts.

  - **GS Paper 3:** Energy security, international trade disruptions, and maritime infrastructure.

 - **GS Paper 4:** Ethical dimensions of diplomacy and pursuit of peace in global governance.

In Essence:
India's support for the **Gaza peace plan** and its call for an **early end to the Ukraine war** reflect a **balance between idealism and realism** in foreign policy—upholding peace, ensuring energy and food security, and reinforcing **India's vision of a stable, multipolar global order**.

12. Can the World Break China's Rare Earth Monopoly? – Strategic and Economic Implications

1. Background and Global Context

- **Rare earth elements (REEs)** are 17 critical minerals essential for **high-tech, defense, renewable energy, and semiconductor industries**.

- China currently dominates **70% of rare earth mining** and **90% of global processing**, making it a **near-monopoly supplier**.

The dominance
China produces more rare earths than all other nations put together.

Country	Rare earth production in 2024, by country (in tonnes)
China	270,000
US	45,000
Myanmar	31,000
Australia	13,000
Nigeria	13,000
India	2,900
Russia	2,500
Madagascar	2,000
Malaysia	310
Vietnam	300

Source: US Geological Survey
GOPAKUMAR WARRIER/MINT

- In response, countries like the **U.S., Australia, India, Japan, and the EU** are now taking steps to **diversify supply chains** and reduce strategic dependence on Beijing.

- The issue is no longer merely economic but **geopolitical**, as China has **weaponized its dominance**, restricting supply and export of processing technology.
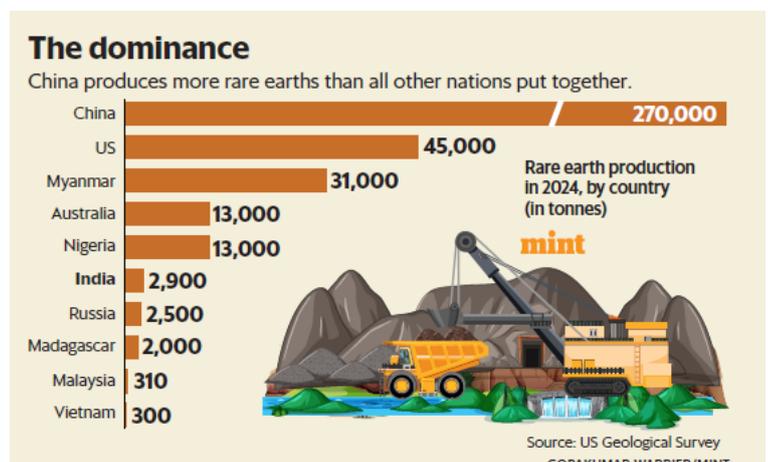
2. Recent Global Developments

- The **United States** has signed new agreements with **Australia, Thailand, and Malaysia** to develop and secure **alternative rare earth supply chains**.

- These deals aim to **break China's monopoly** and ensure **supply chain resilience** for critical minerals.

- Australia, backed by the U.S., is projected to become a **major supplier by 2030**, but the process requires **massive investment and time**.

- The **Lowy Institute (Australia)** estimates that a **transparent, competitive global market** for rare earths may only emerge by **the end of this decade**.

3. Economic and Technological Challenges

- **Environmental Costs:** Rare earth mining and refining are **pollution-intensive**, deterring many Western nations from large-scale production.

- **Cost of Production:** China produces rare earths at a **significantly lower cost**, maintaining market dominance and **undercutting competitors**.

- **Technology Restriction:** China has limited the **export of extraction technology and processing machinery**, hindering other countries' ability to scale up.

- Even as alternative supply hubs develop, **China's control over processing infrastructure** continues to act as a major bottleneck.

4. India's Position and Policy Initiatives

- India lacks adequate **domestic reserves** of rare earths and depends heavily on imports.

- The government has announced a **₹7,350 crore scheme** to boost **domestic mining, exploration, and manufacturing** of critical minerals.

- India is exploring partnerships in **South America (Chile, Argentina)** and **Africa (Namibia, Tanzania)** to secure supplies.

- India is also a founding member of the **Critical Minerals Partnership (CMP)** with the U.S., Japan, and Australia under the **Indo-Pacific Economic Framework (IPEF)**.

- However, the absence of cost-effective **processing technology** remains a key limitation—China's restrictions and high machinery prices from **Japan and Germany** exacerbate this gap.

5. Strategic, Legal, and Environmental Dimensions

- **Strategic Significance:** Rare earth independence is vital for **national security**, particularly for defense and renewable technologies like **missiles, radars, EV batteries, and wind turbines**.

- **Environmental Regulation:** Mining must comply with the **Environment (Protection) Act, 1986** and **Mines and Minerals (Development and Regulation) Act, 1957**, ensuring sustainability.

- **Constitutional Provisions:**

  - **Article 48A** (Directive Principles) directs the State to protect and improve the environment.

  - **Article 297** vests control over mineral and maritime resources with the Union of India.

- **Global Frameworks:** Cooperation on critical minerals aligns with the **Paris Agreement** goals and **Sustainable Development Goals (SDG 7, 9, and 13)**—focused on energy security, innovation, and climate action.

6. Definition (Key Terms)

- **Rare Earth Elements (REEs):** A group of 17 chemically similar elements crucial in modern electronics, defense, and renewable energy technologies.

- **Critical Minerals:** Minerals that are economically and strategically essential for national security and industrial growth, but have vulnerable supply chains.

- **Weaponisation of Trade:** The use of export controls or resource dominance by a country to exert political or economic pressure on others.

7. Conclusion and UPSC Relevance

- The global race to **de-risk rare earth dependence** from China marks a new phase in **geo-economic competition**.

- While **alternative supply chains are emerging**, breaking China's dominance will require **decades of investment, technological innovation, and environmental reforms**.

- For India, diversifying sources, strengthening international partnerships, and developing **domestic refining capacity** are critical to achieving **strategic autonomy** in this domain.

- **UPSC Relevance:**

  o **GS Paper 1:** Industrial geography and resource distribution.

  o **GS Paper 2:** International relations, global trade dependencies, and India's strategic diplomacy.

  o **GS Paper 3:** Energy security, economic development, and sustainable mining policies.

  o **GS Paper 4:** Ethical use of natural resources and sustainable industrial practices.

In Essence:

The rare earth race reflects the **intersection of technology, geopolitics, and sustainability**. While China's decades-long dominance remains formidable, coordinated global efforts led by the **U.S., India, and allies** could gradually reshape the **critical minerals landscape**, ensuring **economic security and strategic balance** in the emerging multipolar world order.