

**CURRENT**

**Pulse**



**MONTHLY**  
**MAGAZINE**

**MAY 01/2026 TO**

# Citizenship (Amendment) Rules, 2026

Ministry of Home Affairs Notified the Citizenship (Amendment) Rules, 2026 It aims to streamline processes concerning Overseas Citizen of India (OCI) cardholders and tightening passport norms for minors.



## Key Highlights

- **Dual Passport Ban for Minors:** A new proviso mandates that a **minor child cannot** at any time hold the passport of any other country while also holding the Indian passport.
  - Under the **2009 rules**, parents **registering** the birth of a **child born outside India** at an Indian consulate had to declare that the child **did not hold any other country's passport**.
- **e-OCI:** OCI status can now be issued in an electronic format (e-OCI) alongside traditional physical cards.
- **Mandatory Online OCI Applications:** OCI processes, including registration, are now completely online via a designated portal ([ociservices.gov.in](https://ociservices.gov.in)).
- **Digital Renunciation:** Streamlines **renunciation and cancellation** procedures of OCI, including mandatory surrender of physical cards and digital acknowledgment.
- **Fast Track Immigration (FTI) Consent:** OCI applicants may now **consent** to share **biometric data** for automatic registration under the **Fast Track Immigration Programme**.
- **Appellate Mechanism:** Revisions against OCI-related orders will now be handled by an authority **one rank higher** than the original deciding authority.

## About the Overseas Citizen of India (OCI) scheme

- Introduced via the **Citizenship (Amendment) Act, 2005** of the Citizenship Act, 1955.
  - In 2015, the Person of Indian Origin (PIO) card scheme was merged with it.
- **Eligibility:**
  - Who were citizens of India on 26th January, 1950 or there after or were eligible to become citizens of India on 26th January, 1950
  - **Exceptions:** Who is or had been a citizen of **Pakistan, Bangladesh** or such other country as the government may specify.
- **Benefits:**
  - **Multiple entry, multi-purpose lifelong visa** to visit India.
  - Exemption from reporting to Police authorities for any length of stay.
  - **Parity with NRIs** in financial, economic and educational fields **except** in the acquisition of agricultural or plantation properties.
- **Does not confer political rights** such as voting or holding constitutional posts.
- OCI is a privilege, not an entitlement, and is **liable to cancellation for violations of Indian law**.

# e-Court Mission



**Chief Justice of India declares Sikkim to be the first paperless state judiciary in the country.**

- A fully paperless judiciary is a system in which **all legal processes are done electronically** rather than through physical paper, using measures such as digital files, e-filing, online hearings, digital case tracking etc.
- Such digital transformation of courts is being undertaken under e-Courts Mission Mode Project.

## **e-Court Mission Mode Project**

- Pan-India initiative to **computerise and digitise the judiciary** for delivering efficient and accessible justice services.
- **Launch:** Launched in **2007** under the National e-Governance Plan (NeGP).
- **Implementing Authority:** Department of Justice under the guidance of the e-Committee of the Supreme Court of India.

# Number of Judges of Supreme Court

**The bill seeks to amend the Supreme Court (Number of Judges) Act, 1956 to increase the judge strength of the Supreme Court from present 33 to 37 (excluding the Chief Justice of India (CJI)).**

- **Article 124 of the Constitution of India** provides for the **establishment of the Supreme Court** and **empowers Parliament to determine the number of judges** over time.
  - Parliament enacted The **Supreme Court (Number of Judges) Act, 1956** to fix the number of judges of SC at 10 (excluding the CJI).
  - SC's strength was then subsequently increased by amendments in 1977, 1986, 2008 and 2019.
- Once the amended law comes into force, the **Supreme Court Collegium** would recommend judges to the government for appointment to the top court.
  - **Chief Justice of India (CJI)**, in consultation with collegium members, **initiates the proposal for appointment** of judges in Supreme Court.
  - Collegium's recommendations are sent to Union Law Minister, who submits them to the Prime Minister, who in turn advises President to formally appoint the judges.
- **Significance:** Additional judges will help in **faster disposal of cases, timely delivery** of justice, and reducing pendency of cases.
  - Presently, Supreme Court has total **92,926 pending cases**.

# Four Parliamentary Committees reconstitutes

Lok Sabha Speaker reconstitutes four Parliamentary Committees for 2026–27 Parliamentary Committees are panels of Members of Parliament formed to scrutinise the functioning of the government and to uphold executive accountability.



- **Two types:**
  - **Standing Committees (Permanent and Regular):** Includes Financial Committees and 24 Departmentally Related Standing Committees (DRSCs).
  - **Ad hoc Committees** (Constituted for specific purpose and cease to exist on finishing their task): Includes Select and Joint Committees on Bills.

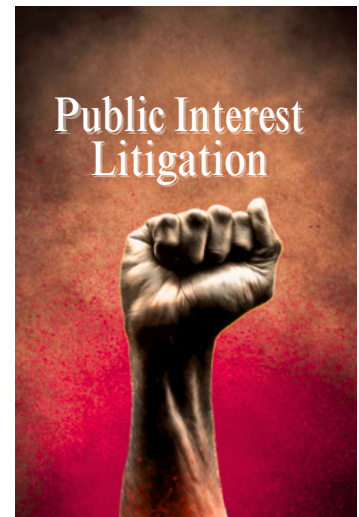
## Role of Parliamentary Committees

- **Continuous legislative oversight:** Act as a vigilant mechanism to monitor executive actions beyond the limited time of Parliament sessions.
- **Detailed scrutiny of policies and laws:** Enable clause-by-clause examination of bills, ensuring informed decision-making and reducing executive arbitrariness.
- **Performance evaluation of government bodies:** Committees such as the Committee on Public Undertakings assess efficiency and functioning of PSUs.

## Issues with Parliamentary Committees

- **Non-binding recommendations:** Committee reports are advisory in nature.
- **Short tenure and frequent reconstitution:** Most committees like DRSCs, have a tenure of only one year.
- **Delay in constitution of committees:** Disrupt their functioning and reduce efficiency.
- **Bypassing of committees:** Important laws (e.g., abrogation of Article 370, Chief Election Commissioner and Other Election Commissioners Bill, 2023) were passed without committee examination.
- **Low attendance and absenteeism:** Reduces effectiveness and depth of discussions.
- **Others:** Absence of expert advisers (Venkatachaliah Commission).

# Public Interest Litigation



Supreme Court Judges expressed concern about misuse of Public Interest Litigation (PIL) The judge observed that PILs, originally meant to advance social justice and improve access to justice, are increasingly being misused as private, publicity, political and even paisa interest litigations.

## About Public Interest Litigation

- **Definition:** It refers to the litigations, filed by a party without any **locus standi** (i.e., the party who is not aggrieved), to protect the **general public interest**.
- **Origin:** PIL concept began in the late Nineteenth Century in the **United States**, with the landmark **Gideon's case** forming its foundation.
  - Efforts of **Justice P N Bhagwati and Justice V R Krishna Iyer** were instrumental in initialization of PILs in India.
  - In India, first reported instance of PIL is when Justice Bhagwati ordered release of 70 undertrial prisoners in **Hussainara Khatoon Case, 1979**.
- The **Supreme Court and the High Courts** have the right to admit PILs under **Articles 32 and 226**, respectively.

## Challenges

- **Misuse of PIL:** PIL has often been used for publicity purposes, personal gains, vendetta politics, thus weakening public trust.
- **Burden on Judiciary:** PIL cases are often **prioritised over ordinary pending cases**, increasing pressure on courts and delaying other matters.
- **Judicial Overreach Concerns:** PIL has faced criticism for the **judiciary overstepping its jurisdiction** and facing difficulties in ensuring implementation of its orders.
- **Others:** Frivolous Litigation, Abuse of liberal locus standi etc.

REASONS FOR GROWTH OF PIL		
Factors Behind the Growth of PIL		Explanation
	<b>1. CONSTITUTIONAL SUPPORT</b>	Provisions under Part III (Fundamental Rights) and Part IV (Directive Principles of State Policy) created a strong foundation for judicial action in public welfare matters.
	<b>2. ENSURING ACCESS TO JUSTICE</b>	PIL evolved as a mechanism to assist poor and marginalized sections who were unable to seek justice because of costly and complicated legal procedures.
	<b>3. JUDICIAL ACTIVISM AND INNOVATION</b>	The judiciary adopted a socially sensitive approach in important cases such as <i>Bandhua Mukti Morcha</i> and the <i>Asiad Workers Case</i> .
	<b>4. WELFARE-ORIENTED LEGISLATIONS</b>	Laws concerning bonded labour, minimum wages, land reforms, and environmental conservation strengthened the role of courts in protecting vulnerable groups.
	<b>5. FLEXIBLE LOCUS STANDI PRINCIPLE</b>	Courts permitted socially conscious individuals or organizations to file petitions on behalf of disadvantaged people. They also initiated <i>suo motu</i> proceedings using media reports and letters.
	<b>6. BROAD INTERPRETATION OF ARTICLE 21</b>	The Right to Life was interpreted widely to include rights related to dignity, legal assistance, education, livelihood, and freedom from inhuman treatment.

# 10 Years of UPI

**Demonstrating extraordinary scale and momentum, UPI has emerged as backbone of India's digital payments ecosystem.**

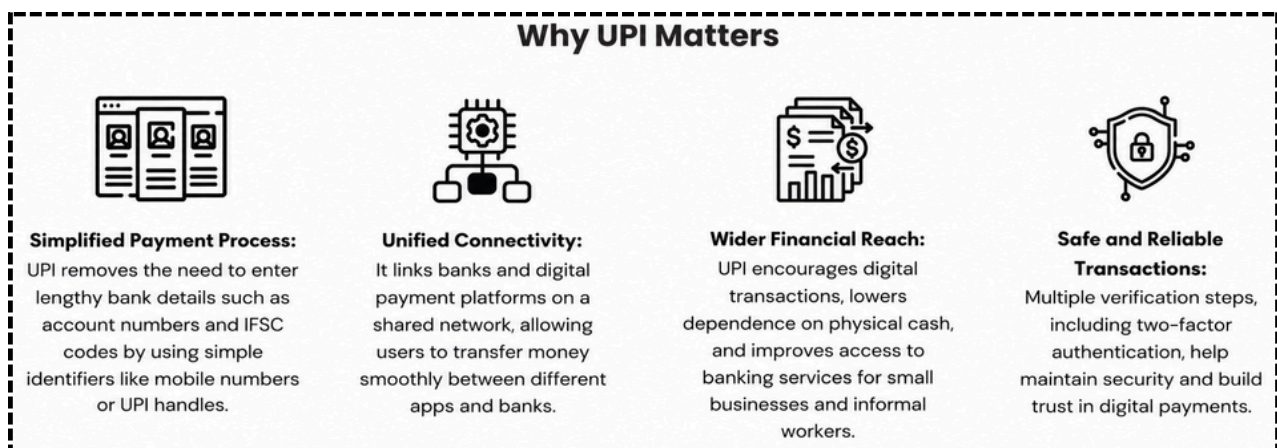


## About UPI

- **Launched:** April 2016 by National Payments Corporation of India (NPCI) under Regulatory Oversight of Reserve Bank of India (RBI).
- **Meaning:** System that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.

## Key Achievements of UPI

- **Annual Transaction Volume:** From 2 crore in FY 2016-17 to **24,162 crore in FY 2025-26**.
  - In 2025, it processed approximately 22,000 crore transactions, with a **daily average of about 60 crore transactions**.
- **Banks Onboarded on UPI:** Increased from **44 banks in FY 2016-17** to **703 banks by FY 2025-26** covering public sector, private, small finance, payments, cooperatives, etc.
- **Global Reach:** UPI accounts for nearly **49 % of world's real-time payment transaction volume (2024)**, a feat recognized by IMF.
  - Operationalised in Countries including **UAE, Singapore, France, Bhutan, Nepal, Sri Lanka, Mauritius, Qatar**.



## National Payments Corporation of India (NPCI)

- **About:** Umbrella organisation for **operating retail payments and settlement systems** in India.
- **Initiative of:** Reserve Bank of India (RBI) and Indian Banks' Association (IBA).
- **Legal Framework:** Payment and Settlement Systems Act, 2007.
- **Nature:** "Not for Profit" Company under Section 8 of Companies Act 2013.
- **Key Products offered by NPCI:** Immediate Payment Service (IMPS); National Automated Clearing House (NACH); Unified Payments Interface (UPI); RuPay; Aadhaar enabled Payment System (AePS); etc.

# FDI flows in india

**Reserve Bank of India (RBI) Points to Moderated Net FDI Despite Robust Inflows** As per RBI, gross FDI amounted to \$88.3 billion, while net FDI inflows were \$6.3 billion (April 2025- February 2026).



## About Foreign Direct Investment (FDI)

- **Meaning:** Investment through **equity instruments** by a person resident outside India in an unlisted Indian company; or in **10% or more of the post issue paid-up equity capital** on a **fully diluted basis** of a listed Indian company.
- **Regulation:** Consolidated FDI Policy (2020); Foreign Exchange Management (Non-Debt Instruments) Rules, 2019.
- **Gross and Net FDI**
  - **Gross FDI:** Total investment made by foreign entities directly into productive assets of India.
  - **Net FDI:** Difference between inward FDI flows and outward FDI flows (Repatriation by foreign firms + Outward FDI by Indian firms).

## Key Reasons for Lower Net FDI

- **Rising Repatriation:** Including **disinvestment by foreign investors limiting net inflows**; repatriation is a sign of **mature market** where investors can enter/exit smoothly.
- **Higher Overseas Direct Investment (ODI):** Overseas **expansion of domestic firms** and their integration into **global value chains**; **stronger corporate balance sheets, liberalised ODI framework (2022)**.
- **Geopolitical Headwinds:** Geopolitical strife and tightening financial conditions have cooled greenfield project announcements globally.

## Key Measures to Increase FDI in India

- **Sectoral Reforms:** Increased FDI caps in Sectors like Defence, Insurance, Pension, Coal Mining, Civil Aviation, etc.
  - Almost **90% of FDI is through automatic route**.
- **Improving Business Environment:** Business Reforms Action Plan (BRAP) 2024 rankings; Logistics Ease Across Different States (LEADS) 2024; Jan Vishwas (Amendment of Provisions) Act, 2023, etc.
- **Global Partnerships:** India-EU Free Trade Agreement (FTA); India-Oman Comprehensive Economic Partnership Agreement (CEPA); etc.

# FDI in Insurance Sector



Finance Ministry notifies FDI easing for foreign firms with up to 10% Chinese stake under FEMA It allows overseas entities having a Chinese shareholding of up to 10% to invest in India under the automatic route.

- In 2020, India had imposed curbs on FDI from nations with which it shares land borders.

## Other Change in FDI Rules:

- **100% FDI in Insurance:** In private insurance companies and intermediaries, such as brokers, without needing prior government approval (automatic route).
  - Foreign investment in the **Life Insurance Corporation of India (LIC)** remains strictly capped at **20%**.
- These changes were officially implemented through the **Foreign Exchange Management (Second Amendment) Rules, 2026**.
- **Significance:** Enhanced FDI inflows, ease of doing business, etc.

## Regulatory Framework for FDI in India

- It is done through the **Foreign Exchange Management Act (FEMA), 1999**.
  - **Administered by:** Reserve Bank of India.
  - **Nodal Body:** The Enforcement Directorate under Ministry of Finance.
  - **Objective of FEMA:**
    - Regulate and update foreign exchange laws.
    - Facilitate external trade, payments, and foreign investment.
    - Develop and maintain a stable foreign exchange market in India under Government policy.
- **Entry Routes for FDI in India:**
  - **Automatic route:** Does not require the prior approval of the Government.
  - **Government Route:** Foreign investment received under this route shall be in accordance with the conditions stipulated by the Government in its approval.

# Mission SAKSHAM

Reserve Bank of India (RBI) launched Mission SAKSHAM, a mission-mode, sector-wide, all-India capacity-building training initiative for UCBs (Urban Co-operative Banks).



- UCBs are subset of cooperative banks operating primarily in urban and semi-urban areas.

## About Mission SAKSHAM

- It aims to conduct a large number of training programmes (in-person and e-learning courses) for UCBs.
- Covers Various Target groups including Board Members, Senior Management, Heads of Risk, Compliance and Audit functions, and employees working in IT functions and other critical areas.
- Designed in consultation with Umbrella Organisation of UCBs and National / State Cooperative Federations.

# IS-PCMR

Ministry of Mines approved 58 companies under Incentive Scheme for Promotion of Critical Mineral Recycling (IS-PCMR as eligible for participation).



**Incentive Scheme for Promotion of Critical Mineral Recycling**

## About IS-PCMR

- Notified on October 2025, scheme is a part of National Critical Mineral Mission (NCMM).
- **Ministry:** Ministry of Mines
- **Aim:** Develop domestic recycling capacity for critical minerals reducing import dependence, and supporting clean energy and advanced manufacturing sectors.
- **Tenure:** 6 years (from FY 2025-26 till FY 2030-31).
- **Financial Outlay:** ₹1,500 crore.
- **Eligible Feedstock:** E-waste, Lithium Ion Battery (LIB) scrap, and scrap other than e-waste & LIB scrap e.g. catalytic convertors in end-of-life vehicles.

# Windfall Tax

Centre cuts windfall tax on diesel & jet fuel exports in line with the price fluctuations in the international market due to the West Asia war.



## About Windfall Tax

- It is a **government levy on extraordinary profits** earned by companies or individuals due to **unexpected circumstances**.
- This occurs when **global events**, such as geopolitical tensions or commodity **price surges**, lead to **windfall gains for certain sectors** (E.g. oil and gas).
- **Objective:** To capture a portion of these unexpected gains to fund public projects, reduce deficits, or redistribute wealth.

# Gig workers

Karnataka operationalised a grievance redressal mechanism for gig workers and Telangana becomes fifth state to adopt gig workers legislation, following Karnataka, Rajasthan, Bihar and Jharkhand.



## About Gig workers

- **Definition:** The Code on Social Security, 2020, defines a gig worker as a person who works outside a traditional employer-employee relationship.
- **Types:** Platform and Non platform-based workers.
  - **Platform workers** are those whose work is based on online apps or digital platforms. E.g., Ola, Zomato, Urban Company, etc.
  - **Non-platform gig workers** are generally casual wage workers and own account workers in the conventional sectors, working part-time or full time.

# Annual report of Directorate of Enforcement (ED)



**Assets attached in money laundering cases rose 23-fold between 2005-14 and 2014-24.**

- Money Laundering covers any process or activity connected with the proceeds of crime and is a **process** that typically follows three stages to finally release laundered funds into the legal financial system:
- **Placement** (i.e. moving the funds from direct association with the crime)
- **Layering** (i.e. disguising the trail to foil pursuit)
- **Integration** (i.e. making the money available to the criminal from what seem to be legitimate sources)

## Other Key findings of Annual Report

- **Performance under Prevention of Money-Laundering Act, 2002 (PMLA): ED maintained a formidable conviction rate** in money laundering cases is approx. 93–94%.
- **Properties worth ₹2,178.34 crore** have been confiscated under the **Fugitive Economic Offenders Act, 2018**.

## Impediments faced by ED in completion of PMLA trials

- **Requirement of prosecution sanction** under Section 197 CrPC (now Section 218 BNSS).
- **Limited geographical spread** of Special Courts, which are predominantly located in metropolitan and Tier-I cities.
- **Complexity of financial investigations** which requires detailed forensic analysis that takes time to record and prove during trial.
- **Requests to foreign jurisdictions face delays** due to legal complexities and some countries' reluctance or refusal to share information.

## Directorate of Enforcement (ED)

- **Genesis:** It was established on **1st May 1956** as "Enforcement Unit" under the Department of Economic Affairs for enforcing **Foreign Exchange Regulation Act, 1947 (FERA)**.
  - Presently, it operates under the **Department of Revenue, Ministry of Finance**.
- **HQ:** New Delhi.
- **ED is entrusted** with the implementation of the following legislations:
  - The Foreign Exchange Regulation Act, 1973
  - The Foreign Exchange Management Act, 1999
  - The Prevention of Money Laundering Act, 2002
  - Fugitive Economic Offenders Act, 2018

# Critical Minerals Imports of India

A recent study by Institute for Energy Economics and Financial Analysis highlights that India's critical mineral imports remain heavily concentrated in a few countries.



## Highlights of report

- **Key Mineral Suppliers of India:**
  - **Cobalt:** Finland
  - **Copper:** Tanzania, Japan
  - **Lithium:** Ireland, Chile, China
  - **Graphite:** China
  - **Nickel:** Australia, Belgium
- **Import Dependence:** India is **100% import-dependent** for lithium, cobalt, and nickel.
- Chile has emerged as **India's largest critical mineral supplier (FY19–FY25)**, mainly due to **copper ore** and **lithium-linked imports**.
- **China's Dominance:** In global **graphite** production, **cobalt** processing, and battery supply chains, creating strategic vulnerabilities.

# Fugitive Economic Offender (FEO)

The Enforcement Directorate (ED) has declared 21 people as fugitive economic offenders (FEOs) over the past seven years, according to its annual report.



## About FEO:

- **Meaning:** FEO is an individual against whom an arrest warrant has been issued for committing scheduled economic offenses exceeding ₹100 crore, who has left India to avoid prosecution or refuses to return to face trial.
- It is defined under the **Fugitive Economic Offenders Act, 2018**.
- Some of the **offences listed in the act** are:
  - Counterfeiting government stamps or currency.
  - Cheque dishonour.
  - Money laundering.
  - Transactions defrauding creditors.

# IMF Working Paper on MSMEs



It compared the productivity of MSMEs in states that have undertaken digitalisation reforms.

- States that implemented more of these reforms recorded **higher total factor productivity**.
  - **Total Factor Productivity** is a measure of an economy's ability to generate income from inputs- to do more with less.

## Significance of MSMEs

- **Economic:** Contribute ~30% to India's GDP and account for ~35% of the country's manufacturing output.
- **Employment Generation:** responsible for ~60% of total employment in India.
- **Export Promotion:** account for ~45% of India's total exports (in 2023-24).
- **Rural Revitalization:** Agri-based and rural MSMEs strengthen village economies and curb distress-driven migration by creating local opportunities in agro-processing.
- **Women Empowerment:** Women-led MSMEs drive gender-inclusive growth and social mobility.

## Government Initiatives for MSMEs:

- **PM Vishwakarma Scheme:** to enhance the quality and reach of products and services by artisans and craftspeople, integrating them into domestic and global value chains.
- **Prime Minister's Employment Generation Programme (PMEGP):** to provide employment opportunities through establishment of micro-enterprises in the non-farm sector.
- **Scheme of Fund for Regeneration of Traditional Industries (SFURTI):** to organize traditional artisans into collectives or clusters.
- **Public Procurement Policy for Micro and Small Enterprises:** mandates that 25% of annual procurement by Central Ministries and Central Public Sector Enterprises (CPSEs) must be sourced from MSEs.

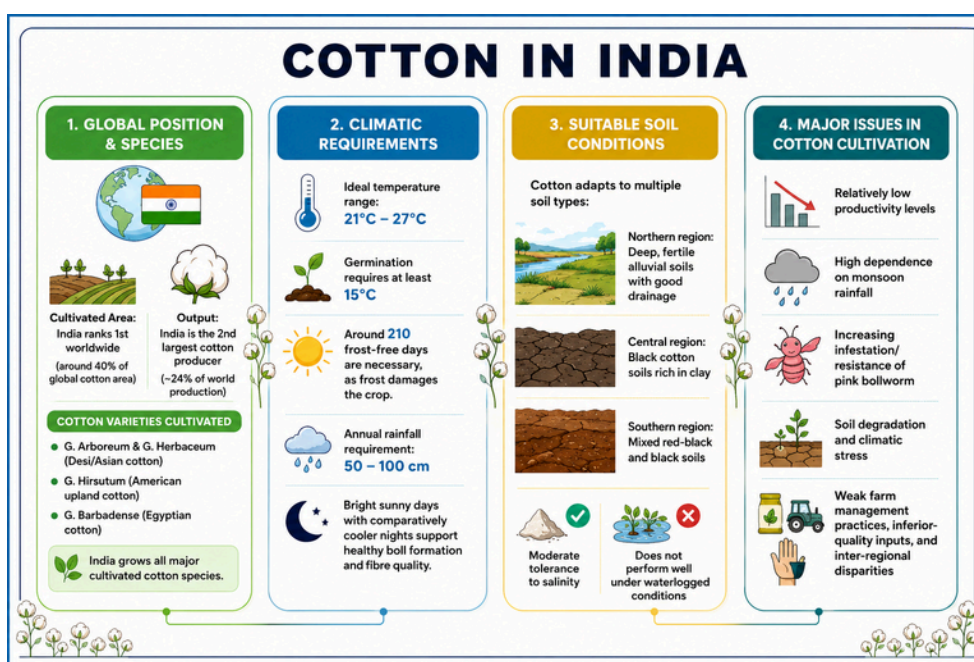
# Mission on Cotton Productivity



Aligning with the government's "5F" vision (Farm to Fibre to Factory to Fashion to Foreign), the mission aims to make India's textile sector globally competitive and self-sufficient.

## About the Mission

- **Aim:** Improve Cotton Productivity to address stagnation in yields, quality concerns, and supply bottlenecks etc.
- **Total Period:** 2026-27 to 2030-31 (₹5,659.22 crore outlay)
- **Joint Implementation:** Ministry of Agriculture and Farmers Welfare and Ministry of Textiles.
- **Targets:** To increase lint productivity from 440 kg/ha to 755 kg/ha and boost total production from 297 lakh bales to 498 lakh bales by 2030-31.
- **Coverage:** Initially 140 districts in 14 cotton-producing states
- **Key Features:**
  - **Technology Development:** Create high-yielding, climate-resilient, and pest-resistant seeds; advanced crop protection technologies.
  - **Modern Cultivation:** Upscale advanced practices like High-Density Planting (HDPS), Closer Spacing, and Extra Long Staple (ELS) cotton.
  - **Branding & Traceability:** Position Indian cotton as a premium, sustainable global product through the Kasturi Cotton Bharat initiative.
  - **Digital Empowerment:** Integrate local mandis digitally for transparent price discovery and direct market access.
  - **Fibre Diversification:** Expand India's textile base by integrating sustainable natural fibres (e.g., flax, bamboo, banana, sisal, ramie) to meet evolving global demands.
- **Others:** Promote cotton waste recycling and Circular Economy; Strengthen cotton testing infrastructure; modernization of ginning and processing factories.



# EAC-PM Paper on Care Economy



April 2026

Virat Singh & Aditya Sinha

The paper calls for a paradigm shift, treating care as a foundational social and economic infrastructure rather than private household responsibility.

## About Care Economy (Or Purple Economy)

- It encompasses activities (paid or unpaid) essential for the well-being of **children, the elderly, and persons with disabilities (PwDs)**.
- **GDP Contribution:** Unpaid domestic and care work (largely by women), is valued at **~15–17% of India's GDP**.

## Recommendations by EAC-PM

- **Innovative Financing**
  - **Parivar Seva Kosh/Family Care Fund:** For community-driven care infrastructure and services.
  - **Carepreneur Fund:** For concessional finance for entrepreneurs in the sector.
  - **Leverage PPPs:** E.g. World Bank funded Tamil Nadu's Women Employment and Safety Programme to provide childcare for working women.
- **Care Workforce:** Skill Gap assessment, standardised training and certifications etc.
- **Policy Reforms**
  - **Gender-neutral childcare leaves:** Phased reforms from extending paternity leave to private sector to gender-balanced parental leave.
  - **Urban Planning Integration:** Recognising care facilities as **essential social infrastructure**.
  - **Strengthening Maternity benefits:** E.g. Sikkim's monthly financial assistance for mothers in private sector.
  - **Others:** Support formation of **Care Cooperatives**; **Co-location** of childcare within government schools; Quality Assurance Mechanisms etc.

## Need for Development of a Formal Care Economy

- **Economic Opportunity:** Investing 2% of GDP can create 11 million jobs (majorly for women).
  - E.g. India needs 31-38 million formal care workers by 2050.
- **Gender Imbalance:** Women spend ~289 minutes daily on unpaid domestic work, against ~88 minutes by men limiting their access to education and employment (time poverty).
- **Demographic Transition and Ageing:** By 2050, elderly population will reach 21% from 10%, while children will form 18% (from 24%).
- **Weakening Traditional Support:** Due to urbanisation and nuclear families, requiring additional care infrastructure.
- **Informal Workforce:** Care workers like ASHA and Anganwadi workers, face high caseloads, limited social security, and honorariums instead of fixed wages.

# Electronic Gold Receipts



National Stock Exchange of India launched EGRs, to formalise India's gold market.

- The **Bombay Stock Exchange** was the first exchange in India to launch EGRs in 2022.

## About EGRs

- They are **dematerialised securities** that represent **ownership of physical gold**, which is stored in SEBI's accredited vaults and **held electronically** through depositories.
  - Each EGR is **fully backed by physical gold with assured quality** and **can be traded on exchange**, integrating gold into financial system.
  - They can be **redeemed anytime** in exchange of gold, unlike Gold ETF (cash settlement).
- **Regulated by:** Securities Exchange Board of India (SEBI)
- **Asset Class:** Securities under the Securities Contracts (Regulation) Act (SCRA), 1956
- **Market Participants:** Retail Investor, Jewellers, Bullion Traders, etc.

# Fair and Remunerative Price (FRP)



Union Cabinet raises sugarcane FRP by ₹10 per quintal.

## About FRP

- FRP is the minimum price declared by the Central Government at which sugar mills are legally bound to procure sugarcane from farmers.
- **Objective:** Ensures assured and remunerative prices to sugarcane farmers.
- **Legal Basis:** Introduced under the Sugarcane (Control) Order, 1966.
- **Institutional Mechanism:** Recommended by the **Commission for Agricultural Costs and Prices (CACP)** and approved by the **Cabinet Committee on Economic Affairs (CCEA)**.
- **Criteria:** FRP is fixed considering factors such as **production cost, sugar recovery rate, alternative crop returns, by-product value, consumer interest, etc.**

**State Advised Price (SAP):** Some States such as Uttar Pradesh, Punjab, Haryana and Uttarakhand announce SAP, which is generally higher than FRP.

# Uniform Guideline for Compilation of Gross State Value Added (GSVA)



MoSPI has released the Uniform Guideline for Compilation of Gross State Value Added (GSVA) Estimates with Base Year 2022-23.

## About the Guidelines

- **Aim:** To improve the compilation of GSVA and Gross State Domestic Product (GSDP) and ensure consistency and comparability of economic data across all States/UTs.
- **Key Priorities:** Expanding **data integration**, updating **methodology** to capture emerging and unincorporated sectors, and **standardizing methods** across all States/UTs.
- Aims to include previously excluded UTs like Lakshadweep and Dadra & Nagar Haveli and Daman & Diu for 100% national coverage.

## Significance of GSDP Estimates

- Used for tracking state-level growth, industrial output etc.
- Used by the Finance Commission and Ministry of Finance to allocate resources and distribute Central taxes.

# Key Takeaways on Santa Marta Conference

Key Takeaways from First Conference On Transitioning Away From Fossil Fuels, co-hosted by Colombia and the Netherlands in Santa Marta, Columbia.



## Key Takeaways

- **Institutional continuity:** Countries agreed to convene **second conference** in **2027**, co-hosted by **Tuvalu and Ireland**.
- **New coordination architecture:** Bring together stakeholders working on different aspects of transition, while linking 30th Conference of Parties to UNFCCC or COP30 processes.
- **Workstreams Launched:** Three tracks on **transition roadmaps, finance reforms, and producer–consumer coordination**.
- **Integration with global climate processes:** Conference outcomes to feed into **COP30 Presidency roadmap**, contribute to **second Global Stocktake** under Paris Agreement.
- **Science Panel for the Global Energy Transition: Launched** to guide countries with **evidence-based pathways** aligned with **1.5°C target**.

# Tanzania

Recently, 5<sup>th</sup> India–Tanzania Joint Trade Committee Meeting was held to strengthen bilateral economic cooperation.

**Tanzania (Capital: Dodoma)**

## Political features

- **Location:** Largest East African country situated just south of Equator.
- **Bordering Countries:** Kenya and Uganda to North; Burundi, Democratic Republic of Congo and Rwanda to the West; Zambia, Malawi and Mozambique to the South.
- **Bordering water bodies:** Lake Victoria in North; Indian Ocean in the East; Lake Tanganyika in West; and Lake Nyasa in Southwest.

## Geographical features

- **Major lakes:** Lake Tanganyika (World's second deepest lake).
- **Highest Peak:** Mountain Kilimanjaro (Dormant volcano and highest mountain in Africa).
- **Major Rivers:** Ruvuma, Rufiji etc.
- **Islands:** Zanzibar, Pemba and Mafia.



# ILO Article 24

Tea plantation workers in West Bengal invoked Article 24 of the International Labour Organisation (ILO) Constitution, alleging labour rights violations and poor working conditions in tea gardens.



- **Article 24** allows workers' or employers' organisations to file a representation against a member state for non-compliance with ratified labour conventions.

## About International Labour Organisation (ILO)

- **Established:** 1919 under the Treaty of Versailles
- **Objective:** Promote labour rights, decent work and social justice
- **Headquarters:** Geneva, Switzerland
- **Members:** 187 member states (**India** is a founding member)
- **Other key information:**
  - **Tripartite structure** involving governments, employers and workers.
  - **First specialised agency** of the United Nations (1946)
  - **Awarded the Nobel Peace Prize (1969)** for promoting social justice and workers' rights.

# Asian Development Bank

ADB launches \$70 billion plan for energy, digital infrastructure in Asia-Pacific



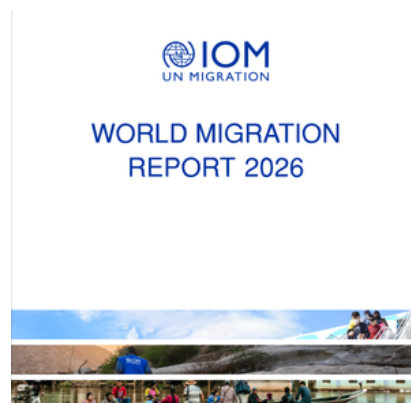
- It includes the **Pan Asia Power Grid Initiative** and the **Asia-Pacific Digital Highway**, connecting economies through energy and technology.

## About Asian Development Bank (ADB)

- **Overview:** It is a **multilateral development bank** that supports sustainable, inclusive, and resilient growth across the Asia-Pacific.
- **Present Members:** From 31 members at its establishment in 1966 to **69 members**, of which 50 are from within Asia and the Pacific and 19 outside.
- **Key Shareholders:** Japan and the USA (each with 15.6% of total shares), China, India, and Australia. (As of 31 December 2024)
- **HQ:** Manila, Philippines.

# World Migration Report 2026

International Organisation for Migration released the World Migration Report 2026.



## Key Highlights

- **Global Migration:** ~304 million people were living outside their country of birth in 2024, accounting for 3.7% of the global population, up from 2.9% in 1990.
- **Top Corridors:** Mexico-US (1st), Afghanistan-Iran (2nd), Syria-Turkiye (3rd), Russia-Ukraine (4th), India-UAE (5th) and India-US (6th).
- **Migration driving development:** Remittances reached an estimated \$905 billion globally in 2024, including \$685 billion to low- and middle-income countries
- **India related:**
  - Indian migrants in UAE were over 3 million while Indians in US were around 3.2 million (second-largest after Mexicans).
  - India had a higher share of female immigrants than male immigrants.
  - Male Emigration from India: Largely due to labour migration to Gulf etc.

# Algeria

India-Algeria Joint Commission agrees to further expand defence cooperation during the first meeting.

## Political Features

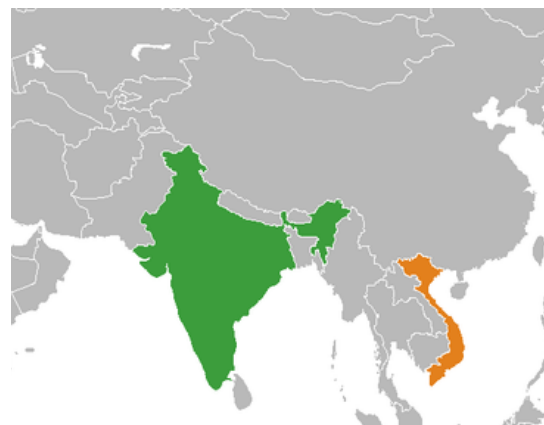
- Located in the **Maghreb region** of North Africa.
  - Maghreb region comprises Atlas Mountains and coastal plain of Morocco, Algeria, Tunisia, and Libya.
- **Land Boundary:** Tunisia (Northeast), Libya (East), Niger & Mali (South), Mauritania & Western Sahara (Southwest), Morocco (West).
- **Maritime Boundary:** Mediterranean Sea (North)

## Geographical Features

- Landscape is dominated by high plateaus and the Sahara Desert, with the **Atlas Mountains** in the north and the **Ahaggar Massif** in the southeast.
- **M'zab Valley:** 5 fortified oases towns is a UNESCO World Heritage site.
- **Climate:** Mediterranean in north to desert type in south.



# India and Vietnam upgraded bilateral



The “Enhanced Comprehensive Strategic Partnership” marks an elevation of the Comprehensive Strategic Partnership established between India and Vietnam in 2016.

- This decision was taken during the visit of the President of Vietnam to India.

## Key Highlights / Outcomes of Visit

- **Trade & Economic Cooperation:** Bilateral trade target set at **\$25 billion by 2030** (currently around \$16 billion).
  - Both sides pushed for Early review and conclusion of ASEAN-India Trade in Goods Agreement (AITIGA).
- **13 strategic MoUs Signed:** Across critical minerals cooperation, Digital Connectivity & FinTech, healthcare, digitisation of ancient Cham manuscripts, etc.
- **Defence & Security Cooperation:** Both countries will establish **Strategic Diplomacy–Defence Dialogue (2+2)**.
- **Maritime Integration:** Vietnam joined **Indo-Pacific Oceans Initiative (IPOI)**.
  - IPOI is a voluntary, non-treaty initiative launched by India at East Asia Summit 2019 in Thailand to promote a free, open, and rules-based Indo-Pacific region.

## Significance of Vietnam for India

- **Act East Policy:** Vietnam is a core partner of India in ASEAN and a critical partner in India's Act East policy, Vision MAHASAGAR and the Indo-Pacific vision.
- **Geostrategic location:** Vietnam's position in the Indo-Pacific is crucial for maintaining secure and stable trade routes.
- **Countering China:** Both support **freedom of navigation and a rules-based order** in the South China Sea in accordance with the 1982 UNCLOS.
- **Supply Chain Diversification:** Vietnam's cooperation in imports and rare earths supports India's manufacturing ecosystem, helps reduce global dependence on Chinese supply chains.
- **Energy security:** Indian companies have invested in oil and gas exploration projects in Vietnamese waters in South China Sea which are extremely rich in hydrocarbon reserves.

# India-EU Trade & Technology Council



India and EU launched €15.2 million (~₹169 crore) joint initiative to strengthen EV battery recycling under the India-EU Trade and Technology Council (TTC)-working group-2.

- The initiative will be funded through the EU's **Horizon Europe** programme and India's **Ministry of Heavy Industries**.

## About India-EU Trade and Technology Council (TTC)

- **Launch:** February 2023.
- **Objective:** It aims to push both regions toward **strategic autonomy** by actively **reducing the EU's dependence on China** and **India's reliance on Russia**.
- **Three Core Working Groups (WGs):**
  - **WG 1:** Strategic Technologies, Digital Governance and Connectivity.
  - **WG 2:** Green and Clean Energy Technologies.
  - **WG 3:** Resilient Value Chains, Trade and Investment.

# Super El Nino

Forecasts of a potential “super” El Niño in late 2026 have raised concerns over intensified heatwaves, droughts, floods, and extreme weather events.



## About Super El Nino

- An exceptionally strong El Niño event in which sea surface temperatures in the central and eastern equatorial Pacific rise by more than 2°C above normal for a sustained period.
- **El Nino** is a warm phase of ENSO (**El Niño–Southern Oscillation**) marked by abnormal warming of the central and eastern equatorial Pacific Ocean, often weakening the Indian monsoon.

# Mission Mausam

Indian Institute of Tropical Meteorology (IITM) established a state-of-the-art Urban Testbed and Aerosol Observatory at the SRM Institute of Science and Technology in Chennai under 'Mission Mausam'.



## About Mission Mausam

- **Launched:** In 2024.
- **Ministry:** Ministry of Earth Sciences (MoES).
- **Implementing Agency:** India Meteorological Department (IMD), the National Centre for Medium-Range Weather Forecasting (NCMRWF), and IITM.
- **Budget:** ₹2,000 crores over 2 years.
- **Aim:**
  - To make the nation ‘**Weather Ready**’ and ‘**Climate Smart**’.
  - To **improve weather and climate services**, ensuring timely and precise **observation, modeling, and forecasting information** for multiple sectors, including agriculture, disaster management, and rural development.

# Teesta River

**Bangladesh seeks China's support for Teesta project.**



## About Teesta River

- **Origin:** Tso Lhamo Lake in North Sikkim. Pahunri Glacier, Khangse Glacier and Chho Lhamo Lake are also considered its sources.
- **Course:** Flows through Sikkim and West Bengal in India before entering Bangladesh, where it joins the Brahmaputra River at Fulchori.
- **Major Tributary:** Rangit River is the main tributary of the Teesta in Sikkim.
- **Teesta Water Treaty:** In 2011, a draft agreement was proposed where India would get 42.5% and Bangladesh 37.5% of Teesta's water during the dry season.
  - Implementation was halted due to objections from West Bengal.

# Prosopis juliflora

**Prosopis juliflora, to be used as feedstock for India's first green methanol production plant, designed to fuel ocean-going ships.**



## About Prosopis juliflora

- **Leguminous tree highly resistant to drought and salinity**, recognized as one of the **world's most dominant invasive species**.
- Native to **Mexico**, first introduced by British in 1920s to 'green' Delhi and by Gujarat forest department in 1961.
- **Ecological Impacts:**
  - It is a **Phreatophyte**, a deep-rooted plant that absorbs water from the **phreatic zone below water table**, exacerbating **hydrological drought**.
  - Reduces **native plant diversity**, posing a serious threat to **Phyto diversity**.

# Whitley Award

**Barkha Subba and Parveen Shaikh won the Whitley Awards for protecting the Himalayan salamander and Indian skimmer habitats.**



## About Whitley Award

- Given by the Whitley Fund for Nature, a UK-based nature conservation charity.
- **Purpose:** Supports **conservationists** in protecting wildlife and ecosystems.
- **Recognition:** Known as the **Green Oscars**, awarded each year.

## About Himalayan salamander

- It is a rare, **semi-aquatic amphibian** found in the **Eastern Himalaya**.
  - Endemic to India, Nepal and Bhutan, also found in Myanmar, Thailand, etc.
- Classified as **vulnerable** by IUCN.
- Salamanders return to their natal site to breed and lay eggs, a process known as philopatry.

## About Indian Skimmer

- It is one of the three **bird species** that belong to the **skimmer genus Rynchops**.
- Classified as **Endangered** by IUCN.
- India is home to more than 90% of the global population, especially in **Chambal River**.
- Known for their **bright orange bills**, they skim the surface of rivers by inches to catch fish. They nest on sandbars, mid river islands that appear seasonally

# Microplastic Pollution from Landfills



A recent study by Council of Scientific & Industrial Research-National Environmental Engineering Research Institute (CSIR-NEERI) warns that India's decades-old garbage dumps are emerging as major sources of microplastic pollution.

- **Microplastics** are synthetic plastic particles **smaller than 5 mm** formed from the breakdown of larger plastics or manufactured directly for industrial use.
  - **Types:**
    - **Primary:** Intentionally manufactured small plastics (e.g., **microbeads**, industrial pellets).
    - **Secondary:** Generated from **degradation** of larger plastic waste due to sunlight, heat, and physical abrasion.

## Key Findings of the Study

- **Dispersion:** **Landfill leachate** and **seasonal winds** transport microplastics into groundwater, farmlands (soil), urban areas, and coastal ecosystems.
  - These tiny, toxic particles pose a direct threat to **local agriculture, drinking water, food webs, and human health.**
- **Primary Culprits:** **Polyethene** and **polypropylene** are the most frequently identified plastics, which dangerously pollute soils and compost used for growing food.
- **Policy Gap:** Existing initiatives such as the Swachh Bharat Mission **lack dedicated mechanisms for monitoring microplastic emissions** during landfill remediation.
- **Governance Deficit:** Absence of **India-specific standardised monitoring frameworks** hinders effective regulation and evidence-based waste management.

## Challenges of Landfills Management in India

- **Waste Management Deficit:** Poor waste segregation, inadequate landfill infrastructure, etc. due to **weak financial and technological capacities of Municipal bodies** hinder scientific waste processing.
- **Urban Sustainability Challenge:** Rapid urbanisation and **rising municipal waste generation** (nearly **1.62 lakh tonnes** daily) are placing immense pressure on existing landfill capacities.

## Initiatives to deal with Legacy Landfills in India

- **Swachh Bharat Mission:** Focuses on scientific waste management **and legacy landfill remediation under SBM-U 2.0.**
  - Under the **Dumpsite Remediation Accelerator Programme**, **2,479 legacy dumpsites** have been identified and **over 61% of legacy waste** has already been processed.
- **Waste Management Rules:** Solid Waste Management Rules (2026), Plastic Waste Management Rules (2016), and E-Waste Management Rules (2022) promote segregation, recycling, and **Extended Producer Responsibility (EPR).**
- **GOBARdhan Schem:** Converts biodegradable waste into biogas and organic manure to reduce landfill burden.
- **Legacy Waste Biomining:** Municipal bodies are reclaiming old dumpsites through biomining and bioremediation.
- **Single-Use Plastic Ban (2022):** Prohibits identified single-use plastic items to curb plastic pollution.

# E-Waste Management in India

At the Paryavaran NITI Manthan, policymakers flagged gaps in Extended Producer Responsibility (EPR) implementation as India loses recoverable e-waste materials worth nearly ₹51,000 crore.



## Issues related to E-Waste Management in India

- **Weak Enforcement:** Allows spurious and non-operational recyclers to distort EPR markets through fraudulent certification.
- **Informalization:** India's formal recycling rate is 10%, compared to global average (~22%), and USA (56%).
- **Narrow focus:** EPR coverage in E-waste recycling is limited to Gold, Copper, Iron, and Aluminum.
- **Other issues:** Low skills; accessibility of advanced recycling processes; collection inefficiencies; low consumer awareness etc.

## Government Measures for E-waste management

- E-Waste (Management) Rules, 2022: Strengthened EPR framework for producers and recyclers.
  - EPR E-Waste portal & Trading Platform: Developed by CPCB for registration, tracking and monitoring of e-waste, along with EPR certificate trading mechanisms.
- Battery Waste Management Rules (BWMR), 2022: Mandates collection, recycling, and refurbishment targets, prohibiting landfill disposal and incineration.
- National Critical Mineral Mission (NCMM): Aims to develop domestic recycling capacity for critical minerals from lithium-ion batteries, e-waste and industrial scrap.

## Way Forward

- GST-linked verification: To improve traceability and reduce discrepancies in recycling claims.
- Expanding EPR coverage: To other high-value metals and critical minerals.
- Promote Advanced Recycling Technologies: Like hydrometallurgy, AI-based material recovery systems etc.
- Other measures: Increase authorised collection centres; integrate informal workers through training, certification and financial incentives; etc.

## Status of India's E-Waste

- India is 3rd largest e-waste generator globally.
- E-waste generation increased from ~2.76 MMT (2020) to ~6.19 MMT (2024)
  - Projected to reach 14 MMT by 2030.

# Bongos

Four mountain bongos arrived in Kenya on their way to their native forests after years in the care of a zoo in the Czech Republic.



## About Bongo Antelope (*Tragelaphus eurycerus*)

- **Characteristics:**
  - World's largest forest antelope.
  - Recognised by its **reddish-brown body with white stripes and long spiral horns.**
  - **Two subspecies:** Western Bongo and Eastern (Mountain) Bongo.
- **Habitat:** Dense rainforests and forest-savanna ecosystems, in Central and East African forests.
- **IUCN Status:** Western Bongo (Near Threatened); Eastern Bongo (Critically Endangered).
- **Threats:** Habitat loss and poaching.

# Atacama Desert

Light pollution threatens world's darkest skies in Atacama Desert impacting Astronomical Observations.



## About Atacama Desert

- **Location:** Northern Chile, South America.
  - **Coastal non-polar hyper arid desert** running North to South between **Pacific Ocean (west) and Andes Range (east).**
- **Aridity:** Caused by **Humboldt Current (cold ocean current)** flowing off Pacific Coast.
- **Features:** salt pans, alluvial fans, dunes, and volcanic cones, supports astronomical observations due to clear skies.
- **Major Astronomical Observatories in Atacama:** Atacama Large Millimeter Array; Paranal Observatory, etc.

# Caracal



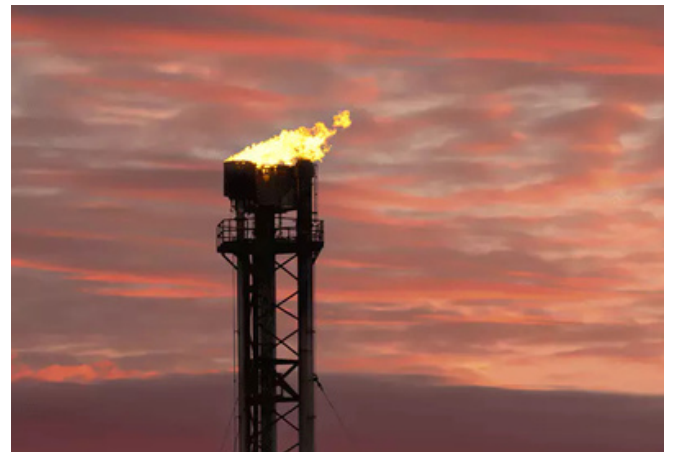
Rare caracals (locally called padang) spotted in Thar Desert near India-Pakistan border.

- According to the **Wildlife Institute of India (WII)**, only around **50 caracals** remain in India.

## About Caracal (*Caracal caracal*)

- **Characteristics:** Secretive, nocturnal animal known for its quickness and ability to catch flying birds.
- **Habitat:** Dry savannah and woodland areas, scrubland, rugged mountainous regions, deserts.
- **Distribution:** Africa, Middle East, Central Asia, arid areas of Pakistan and India (Rajasthan, Gujarat, Madhya Pradesh).
- **Threat:** Habitat loss, fragmentation, and retaliatory killings etc.
- **Conservation Status:** Least concern (IUCN); Schedule I (WPA, 1972).
- **Conservation Efforts:** Caracal listed as critically endangered species under Species recovery program.

# Methane Alert and Response System (MARS)



MARS will now cover coal mines and waste facilities after analysis identified Kanjurmarg landfill, Mumbai among the world's top 3 methane emitting sites.

- Until now, MARS focused on **oil and gas facilities** in countries that are part of **UNEP's Oil and Gas Methane Partnership 2.0**.

## About MARS

- It is **first public global satellite detection** and notification system providing data on **very large methane emissions (super-emitters)** around the world.
- **Nodal Agency:** United Nations Environment Programme's **International Methane Emissions Observatory**.
- **Launched at:** COP27 climate summit, Sharm el-Sheikh, Egypt (2022).
- Assists implementation of **Global Methane Pledge**, which aims to **cut global methane emissions** by at least **30% from 2020 levels by 2030**.

# Bhitarkanika Wildlife Sanctuary



A study revealed presence of microplastics and toxic heavy metals across sampled sites in Odisha's Bhitarkanika Wildlife Sanctuary (WLS).

- **Microplastics** are plastic particles smaller than **5 millimetres**.

## About Bhitarkanika WLS

- **Location:** Kendrapara district, Odisha.
- **Geography:** Formed by the estuarine delta of the Brahmani, Baitarani, and Mahanadi rivers.
- **Ecosystem:** India's second-largest mangrove ecosystem, second only to the Sundarbans in West Bengal.
- **Designations:** National Park and Ramsar Wetland of International Importance.
- **Key Fauna:** Saltwater Crocodiles, rare white (albino) crocodiles etc.
  - **Gahirmatha Beach** is largest known rookery (Arribada) for **Olive Ridley Sea Turtles**.

# Hasdeo-Arand Forest



Rajasthan's state-owned electricity producer sought to divert 1,742.6 hectares of prime forest and fell 4.48 lakh trees in Hasdeo-Arand forest.

## About Hasdeo-Arand Forest

- **Location:** Spans Korba, Surguja and Surajpur districts in Chhattisgarh.
- **Type:** Dense **Sal** forests.
- **Fauna:** Home to nine **Schedule-I species**, including leopards, sloth bears and elephants.
- **Significance:** Often called the “**lungs of central India**”; catchment for **Hasdeo River and Bango Dam**; dispersal corridor for **tigers**; vital resource for **tribal communities**.

# Vehicle-to-Everything (V2X) Communication



TRAI releases Consultation Paper on Regulatory Framework for Vehicle-to-Everything (V2X) Communication It identifies Cellular-V2X (C-V2X) as the preferred technology, leveraging existing 4G and 5G networks.

- V2X relies on two main wireless technologies: **Dedicated Short-Range Communication (DSRC)** and **C-V2X**.
  - DSRC uses **Wi-Fi** whereas **C-V2X** is a more comprehensive standard, leveraging **cellular networks**.

## About V2X Communication

- V2X refers to a **communication system** where a **vehicle exchanges real-time information (E.g. position, speed)** with other vehicles, infrastructure, pedestrians, and networks using short-range and/ or direct communications.
- It is a core component of **Intelligent Transport Systems** and connected mobility.

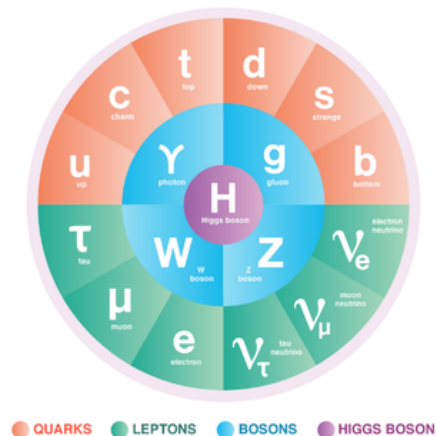
## Significance of V2X

- **Road Safety:** Enables safety applications like collision avoidance, intersection management, and emergency vehicle warning systems, reducing accidents and fatalities.
  - **SDG 3.6** aims to **halve** global road traffic deaths and injuries **by 2030**.
  - E.g. **Forward Collision Warning System (USA)** showed a 9% decrease in rate of forward collision conflicts.
- **Traffic Efficiency:** Optimizes traffic flow and reduces congestion through smart signal coordination.
- **Autonomous Vehicle Support:** Enhances decision-making for self-driving systems with external data inputs.
- **Environmental Benefits:** Lowers fuel consumption and emissions contributing to UN SDGs.
- **5G & Smart City Integration:** Enables low-latency communication for connected urban mobility systems.

## Challenges of V2X

- **Standardization:** Lack of unified communication protocols hinders interoperability and large-scale adoption.
- **Security & Privacy:** Vulnerability to cyberattacks necessitates strong encryption and data protection mechanisms.
- **Infrastructure Investment:** High costs of upgrading traffic systems and deploying roadside units.
- **Regulatory & Legal Issues:** Unclear laws on liability, data ownership, and insurance.

# Standard Model of Particle Physics



New study finds the Standard Model of Particle Physics remains accurate, with no discrepancy.

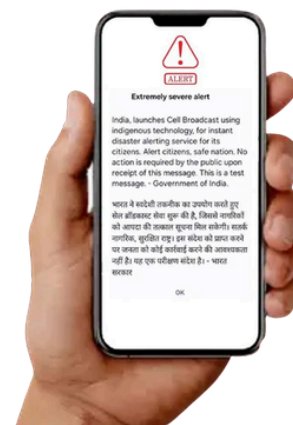
- Refined theoretical calculations have resolved the **muon** (subatomic particle similar to electron but heavier) "anomaly" which challenged the Standard Model.

## About Standard Model of Particle Physics

- **Basic building blocks of matter:** The Standard Model **classifies** all visible matter using **quarks** (which build protons and neutrons) and **leptons** (such as electrons).
- **Fundamental Forces:** It describes **how three of nature's forces** (electromagnetic, strong nuclear, and weak nuclear) **govern subatomic behavior**.
- **Force-carrying particles:** It explains **interactions** through **bosons** (which act as force carriers), such as photons (electromagnetism), W and Z bosons (weak force), and gluons (strong force).

# Cell Broadcast System

Ministry of Communications launched Cell Broadcast System (CBS).



## About CBS

- It is a **telecom-enabled public warning system** that enables authorities to **broadcast simultaneous, geo-targeted alerts** to mobile devices within a defined area.
  - It is integrated with the CAP-based **SACHET platform**.
- It is an **indigenous technology** developed by the **Centre for Development of Telematics (C-DOT)** under the Department of Telecommunications (DoT), in collaboration with the National Disaster Management Authority (NDMA) and the Ministry of Home Affairs (MHA)
- It overcomes the limitations of traditional SMS-based systems, ensuring that critical information can be disseminated quickly and efficiently to large populations within targeted areas.

# Satellite Mission Drishti Launched



**World's First OptoSAR Satellite Mission Drishti Launched** Developed by Indian Space Start-up GalaxEye, launched aboard SpaceX's Falcon 9 rocket, it is India's largest privately built Earth Observation satellite.

## About Mission Drishti

- **Uses OptoSAR:** It is the first to combine Multispectral Imaging (MSI) and Synthetic Aperture Radar (SAR) on a single platform.
- **Orbit:** Sun-synchronous Low Earth Orbit (LEO).
  - LEO orbits around Earth at an altitude of about 160 km to 2,000 km.
- **Capability:** All-weather, day-night, intuitive imaging capabilities.
  - It will promote space-based surveillance.
- **Resolution:** Highest among Indian private players.

## About OptoSAR

- It is an end-to-end system of hardware and software designed to work in perfect harmony.
- **Technology Used:** SyncFusion Stack
- **Addresses Limitations of Earlier Satellites:**
  - **Optical sensors:** Deliver clear, intuitive images, but are limited by clouds and darkness.
  - **SAR:** Can see through cloud cover and operate day and night, but imagery is harder to interpret.

## Achievements of Indian Space Start-ups

- **Agnikul Cosmos:** Built the world's first 3-D printed rocket engine.
- **Skyroot:** Tested India's first privately built rocket.
- **InspeCity:** Develops satellite life-extension technologies and serves as India's first fully vertically integrated platform for in-orbit servicing.

# Emerging Defence Technologies



**Defence Minister pushes for edge in emerging high-tech technologies** At North Tech Symposium, Defence Minister stressed the urgent need for India to accelerate innovation in cutting-edge defence technologies in emerging domains.

## Emerging domains of Defense Technology

- **Directed Energy Weapons (DEWs):** Ranged weapons that use concentrated **electromagnetic energy** like lasers, microwaves, or particle beams, rather than kinetic energy.
- **Hypersonic weapons Systems:** Include Hypersonic Glide Vehicles (HGVs) and Hypersonic Cruise Missiles (HCMs) operating at speeds exceeding Mach 5 and altering their flight paths mid-course which makes their interception extremely difficult.
  - E.g., Russia's Oreshnik Hypersonic missile.
- **Artificial Intelligence (AI):** For cyber defence (detecting anomalies and countering intrusions), predictive maintenance (assessing aircraft component health to reduce downtime), and sophisticated training simulations.
- **Quantum Technologies:**
  - **Quantum computers** to optimize complex military logistics and supply chains.
  - **Quantum Key Distribution (QKD)** to enable secure, un-hackable communications with instant detection of interception.
  - **Quantum sensors** to enhance detection of submarines, sea mines, stealth vehicles, and underground bunkers.

## Government Initiatives for emerging Defence Technology

- **iDEX (Innovations for Defence Excellence):** To foster innovation & indigenisation in defence and aerospace.
- **ADITI (Acing Development of Innovative Technologies with iDEX):** To develop 30 critical deep-tech and strategic technologies to reduce import dependence.
- **Technology Development Fund (TDF) Scheme:** It funds industries, MSMEs, startups, and academic institutions to develop indigenous defence and dual-use technologies.
- **Institutional Framework for AI:** Through Defence AI Council (DAIC) and Defence AI Project Agency (DAIPA).
- **Hypersonic Weapons Development:** E.g., 'Dhvani' Hypersonic Glide Vehicle (indigenous model).

# Space Warfare



**Dual-use Satellites Blurring Lines of Modern Space War**  
Cyber-attacks impacting satellite networks and GPS spoofing incidents brought to focus the issues concerning dual use satellites and modern space warfare.

## Space in Modern Warfare

- **Meaning:** Refers to **military conflict** conducted into or from outer space, aimed at disrupting or destroying satellites and other space assets.
  - It involves **Kinetic** (Anti- satellite weapons) and **Non-kinetic weapons** (cyber warfare and electromagnetic pulses (EMPs)).

## Consequences of Space Warfare

- **Swiftiness and Scale:** Space amplifies weapon platforms by **increasing velocities** for missile trajectories, thus, enhancing speed and accuracy, potentially escalating conflicts.
- **Military Actions:** Impair military operations like distant **Drone operations**, **Anti-Access and Area Denial (A2/AD)**, and **Manned Unmanned Teaming (MUMT) missions**, etc.
- **Debris:** A minuscule fragment of wreckage from an obliterated satellite can harm spacecraft like International Space Station.
- **Disruption of Essential Services:** Including GPS Systems, Banking and power grids causing blackouts, etc.

## Key Measures Preventing Warfare in Space

- **Outer Space Treaty (1967):** Prohibits deployment of weapons of mass destruction into space.
- **The Liability Convention (1972):** Expands upon Article 7 of Outer Space Treaty, establishing absolute liability for launching states for damages caused.
- **The Moon Agreement (1984):** Moon and other celestial bodies be used **exclusively for peaceful purposes**.
- **Key Indian Initiatives:** **Defence Space Agency (DSA)** to protect Indian interests in outer space; **Guidelines for Space Cyber Security** by Indian Computer Emergency Response Team (CERT-In), etc.

## Space in Contemporary Warfare: Key Dimensions



**Space as a Key Strategic Frontier:** Outer space has emerged as a critical strategic domain. It underpins navigation, secure communication, remote operations, surveillance, and information warfare.



**Expansion of Anti-Satellite (ASAT) Capabilities:** Several nations, including China, the United States, Russia, and India, have developed and demonstrated ASAT technology. India carried out its ASAT mission through Mission Shakti in 2019.



**Military and Civilian Utility of Satellites:** Satellites have both civilian and defence applications. They are vital for missile defence, reconnaissance, intelligence gathering, and robust communication networks.

# Sodium and Fluoride-Ion Batteries



Alternatives 'Beyond-Lithium' Batteries Emerge amid Rising Sectoral Demands Battery alternatives like Sodium and Fluoride ion batteries offer huge potential apart from lithium ion batteries.

## About Sodium-Ion Batteries

- **Meaning:** Function similarly to lithium-ion batteries but **use sodium- ions (Na<sup>+</sup>) as charge carriers**.
  - **Rechargeable battery** that generates electricity by moving ions between two electrodes: a positive electrode (cathode) and a negative electrode (anode).
- **Benefits Offered:**
  - **Availability:** Sodium being abundant, inexpensive, and globally available.
  - **Safer:** Lower risk of catching fire compared to Lithium batteries when operated in extreme conditions.
  - **Transportation and storage:** Typically safer compared to lithium.

## About Fluoride-Ion Batteries

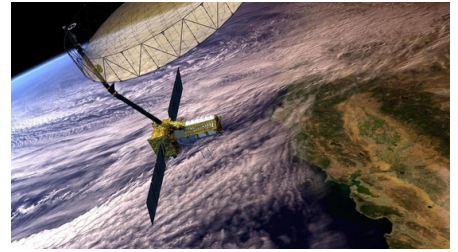
- **Meaning:** Rechargeable system in which fluoride ions (anions) serve as **mobile charge carriers between electrodes during cycling**.
- **Benefits Offered:**
  - **High Energy Densities:** Could deliver more than 2000Wh/kg (compared 500 Wh/kg for Lithium ion batteries).
  - **Availability:** Fluorine is **far more abundant than lithium** with a larger supply chain.

## Lithium-Ion Batteries

- **About:** **Rechargeable battery**, widely used in **portable electronics and electrified transportation**.
  - **Anode and cathode** store lithium, **electrolyte** carries positively charged lithium ions from anode to cathode and vice versa through separator.
- **Benefits:** **Higher energy densities** compared to lead-acid batteries (75 Wh/kg) and sodium ion batteries (100-160 Wh/kg); low maintenance; low self-discharge rate (1.5-2% per month); does not contain toxic lead or cadmium.
- **Constraints:** High import dependence and supply chain disruptions issues(depends on scarce lithium, graphite, cobalt, nickel), slow charging rate, etc.

# NISAR

NASA's NISAR satellite observations revealed rapid land subsidence in Mexico City due to excessive groundwater extraction.

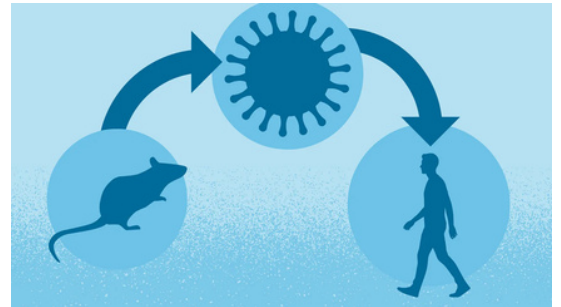


## About NISAR (NASA-ISRO Synthetic Aperture Radar) Satellite

- **Nature:** First joint Earth observation satellite mission between ISRO and NASA.
- **Launch Vehicle:** GSLV-F16 (GSLV Mk-II)
- **Orbit:** Sun-synchronous polar orbit
- **Mission Life:** 5 years
- **Dual Bands:** First satellite to use both L-band and S-band Synthetic Aperture Radar (SAR) from a single platform **Unique Feature.**
- **Imaging Capability:**
  - Fully polarimetric and interferometric data
  - ~240 km swath coverage
  - Revisits Earth every 12 days
- **Technique Used:** Advanced SweepSAR technology for high-resolution wide-swath imaging.

# Hantavirus

Hantavirus outbreak has trapped 150 people on Dutch flagged cruise ship MV Hondius leaving 3 persons dead.



## About Hantavirus

- Zoonotic viruses carried by rodents (rats and mice) that can cause severe disease in humans.
- **Transmission:** People usually get infected through contact with infected rodents or their urine, droppings or saliva.
- It causes 2 types of syndromes:
  - **Hantavirus Cardiopulmonary Syndrome (HCPS):** A rapidly progressive condition affecting the lungs and heart.
  - **Haemorrhagic fever with renal syndrome (HFRS).**
- There is **no specific cure** available.

# Brain-Eating Amoeba

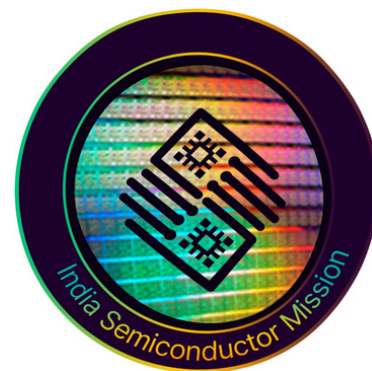
Scientists warn that rising temperatures due to climate change can spread the risk of disease-causing amoeba, particularly, brain-eating amoeba.



## About Brain-Eating Amoeba

- Lives in **soil and warm freshwater lakes, rivers, ponds, and hot springs** around the world.
- Enters the **body through the nose**, and attacks the brain tissues.
  - Can cause an infection called **Primary Amebic Meningoencephalitis (PAM).**
  - PAM is a **rare, fulminant infection of central nervous system**, that is always fatal.

# India Semiconductor Mission



Recently Cabinet approved two more semiconductor manufacturing units under ISM.

- It includes country's **first commercial Mini/Micro-LED display facility** based on **GaN (Gallium Nitride) Technology** in Dholera, Gujrat.
- GaN, a semiconductor, is a core material for blue/green micro-LEDs and is better suited for high power and high-frequency applications.

## About ISM

- **Launched:** In 2021 with an aim to build a strong semiconductor and display ecosystem, positioning India as a global hub for electronics manufacturing and design.
- **Ministry:** Ministry of Electronics and Information Technology.
- **Four Sub-Schemes:**
  - Semiconductor Fab Scheme
  - Display Fab Scheme
  - Compound semiconductor and ATMP scheme
  - Design Linked Incentive Scheme

# ANEEL Fuel

Clean Core Thorium Energy (CCTE) successfully completed high-burnup irradiation testing for its patented 'ANEEL' fuel at the Idaho National Laboratory's Advanced Test Reactor.

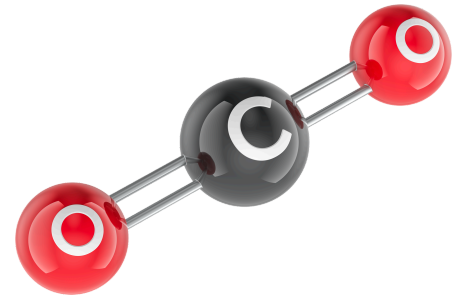


## About ANEEL (Advanced Nuclear Energy for Enriched Life) Fuel

- It is a **unique blend of thorium and a small amount of enriched uranium** (High Assay Low Enriched Uranium).
  - The fuel is named to honour Dr. Anil Kakodkar, one of India's foremost nuclear scientists.
- **Significance of ANEEL Fuel:**
  - Significant **reductions in nuclear waste**
  - Enhancing **India's energy security** using domestically available thorium
  - **Saves money** by safely generating more power from current reactors while reducing their day-to-day running costs.

# Sulphur Dioxide

As per a study of IIT Delhi, India could prevent an estimated 1,24,564 deaths every year by fully mitigating sulphur dioxide (SO<sub>2</sub>) emissions through systems like Flue Gas Desulphurisation (FGD).



## About SO<sub>2</sub>

- It is a colorless, toxic gas with a pungent, choking odor.
- **Role in secondary pollutants:** SO<sub>2</sub> reacts in the atmosphere to form secondary inorganic aerosols, including sulphate, nitrate and ammonium.
  - These pollutants **add to PM2.5**, the fine particulate matter linked to cardiovascular and respiratory diseases.
- It is a pollutant monitored under the **National Ambient Air Quality Standards (NAAQS)** notified by the Central Pollution Control Board (CPCB).
  - NAAQS includes NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, Ozone, Lead, CO, Ammonia, Benzene, Benzo(a)pyrene, Arsenic, and Nickel.
- **Major sources:** coal-fired power plants (largest), smelting metallic ores, petroleum refining, volcanic eruptions, and emissions from transportation (ships/locomotives).

# Extragalactic Jets

Scientists discovered that the composition of plasma can lead to the strikingly different appearances of extragalactic jets emerging from the regions surrounding black holes.



## About Extragalactic Jets

- They are highly energetic, narrow streams of plasma and radiation ejected from regions surrounding supermassive black holes at galactic centres.
- **Speed & Extent:** Travel at nearly the speed of light and extend thousands of light-years into space.
- **Radiation Spectrum:** across the electromagnetic spectrum, from radio waves to gamma rays.
- **Source of Energy:** Powered by accretion of matter onto supermassive black holes and guided by strong magnetic fields.

# INS Sagardhwani

INS Sagardhwani arrived in Vietnam marking a significant step towards scientific cooperation.



- It was flagged off for 5<sup>th</sup> edition of the Sagar Maitri (SM-5) initiative.
- Sagar Maitri is a flagship collaborative initiative of Indian Navy and DRDO, aligned with 'Mutual and Holistic Advancement for Security and Growth Across Regions (MAHASAGAR)' vision.

## About INS Sagardhwani

- Specialised oceanographic research vessel commissioned in July 1994.
- Designed by Naval Physical and Oceanographic Laboratory (NPOL) of DRDO and built by Garden Reach Shipbuilders & Engineers (GRSE).

# Girmitiyas

External Affairs Minister begins official visit to Jamaica, Suriname, Trinidad and Tobago



## About Girmitiyas

- Girmitiyas were **Indian indentured labourers** who migrated to British colonies in the mid-to-late 19th century.
  - They filled the labour shortage caused by the **British Slavery Abolition Act of 1833**.
  - The term **Girmit** is a **mispronunciation of Agreement**, referring to their migration contracts.
- **Distribution:** Mauritius, Fiji, West Indies, Mauritius, South Africa, Caribbean (mostly Trinidad and Tobago, Guyana, Suriname, and Jamaica).
- **Source Regions:** Mostly from the **eastern United Provinces and Bihar**.
- **Significance:** Deepen bilateral ties, enhance Soft power diplomacy etc.

# Project 17A Ships

**Mahendragiri, the sixth ship of Nilgiri-class (Project 17A) and fourth ship of the class built at Mazagon Dock Shipbuilders Limited (MDSL), was delivered to the Indian Navy.**



- Other P17A ships are Dunagiri, Taragiri, Udaygiri, Himgiri, Nilgiri.

## About Project 17A

- Project 17A frigates are versatile **multi-mission platforms**, designed by the **Warship Design Bureau (WDB)** and overseen by the Warship Overseeing Team (Mumbai).
- P17A ships are fitted with an advanced weapon and sensor suite as compared to the P17 (Shivalik-class) and include **anti-surface, anti-air, and anti-submarine warfare systems**.
- These ships are configured with **Combined Diesel or Gas (CODOG) propulsion plants**, comprising a diesel engine and a gas turbine.

# Provisions for acid attack Survivors

**Supreme Court has expanded definition of “acid attack victims” under Rights of Persons with Disabilities Act (RPwD), 2016 by including forcible acid ingestion victims and victims with internal injuries (even without visible disfigurement).**



- SC has also suggested a shift in **Burden of Proof** on acid attack accused.
- RPwD Act, 2016 ensures that all PwDs can lead their lives with dignity, without discrimination and with equal opportunities.

## Legal provisions for acid attack survivors in India

- **Section 124, Bharatiya Nyaya Sanhita (BNS, 2023):** Acid attack causing injury/deformity is cognizable, and non-bailable offence with punishment up to **10 years to life and fine**.
- **Section 397, Bharatiya Nagrik Suraksha Sanhita (BNSS):** Free, immediate treatment in all hospitals; police intimation mandatory
- **Victim compensation scheme:** Under Sec 396 Bharatiya Nagrik Suraksha Sanhita (BNSS).
- **Prime Minister's National Relief Fund (PMNRF) Assistance:** Up to ₹1 lakh aid and recognised for welfare schemes.
- **Landmark Judgments:**
  - **Laxmi case:** Regulated acid sale
  - **Parivartan Kendra:** Action against illegal suppliers

# Pulitzer Prize

Two Indian journalists Anand RK and Suparna Sharma, won the Pulitzer Prize for their work in Illustrated Reporting and Commentary category for exposing cybercrime in India.

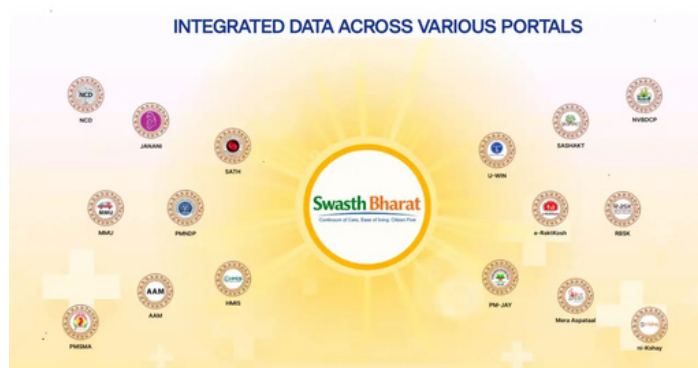


## About Pulitzer Prize

- **What is it:** Prize in journalism, literature and music composition, recognising excellence in reporting and storytelling.
- It is the highest journalism awards in the US, awarded annually in 23 categories.
- **Administered by:** Columbia University
- **Established:** 1917 by provisions in the will of **Joseph Pulitzer**, an Hungarian-American newspaper publisher.

# Swasth Bharat Portal

Swasth Bharat Portal was launched recently by the Health and Family Welfare Ministry.



## Swasth Bharat Portal

- **Nature:** Functions as a **unified digital layer** that integrates existing standalone programme systems via an API-based federated architecture.
- **ABDM-Compliant:** Portal seamlessly integrates with Ayushman Bharat Health Account, Healthcare Professionals Registry and Health Facility Registry enabling secure exchange of interoperable patient health records.
- **Empowering Frontline Workers:** Provides a single interface for ASHAs, ANMs, CHOs, and Medical Officers (MOs), eliminating the need for multiple logins and repetitive data entry.

## Ayushman Bharat Digital Mission (ABDM)

- **Objective:** To develop a robust digital backbone to support the integrated digital health infrastructure and bridging gaps among stakeholders in India's healthcare ecosystem.
- **Type:** Central Sector Scheme
- **Tenure:** 5 years
- **Implementing Agency:** National Health Authority (NHA)

# Structural deficits in India's healthcare System

Recently, India approved 43 new medical colleges, 20,649 additional MBBS and PG seats for 2025-26. However, rural CHCs still face persistent gaps in public healthcare delivery.

## Challenges in Public Healthcare delivery System

- **Acute Shortage of Specialist:** Rural Community Health Centres (CHCs) face nearly 80% specialist vacancies, with only 4,413 specialists available against the requirement of 21,964.
  - Despite addition of 72,627 PG seats across 731 medical colleges since 2014, expansion in medical education has not translated into adequate specialist availability in public healthcare facilities.
- **Weak Health Governance Framework:** Of the 43 newly approved medical colleges for 2025-26, 27 are private institutions with limited accountability towards public health workforce deployment.
- **Reluctance of Doctors to Serve in Rural Areas:** Newly graduated specialists are often unwilling to work in remote and underserved areas.
- **Flawed Budgetary Priorities:** The central health budget heavily prioritizes capital expenditure and building infrastructure rather than functional operations.

## Measures required for improving Public Healthcare delivery System

- **Align PG Medical Education with Public Health Needs:** Link postgraduate medical admissions and specialist training with vacancies in CHCs and district hospitals.
  - Aspirant doctors should be required to sign an undertaking to serve in a designated government facility, with priority given to candidates willing to commit to a **10-year service bond** in difficult-area CHCs.
- **Promote Rural Specialist Deployment:** Provide financial incentives, housing, quality schooling and career progression benefits for doctors serving in difficult and remote areas.
- **Adopting the "All or None" Deployment Strategy:** A CHC should either receive the full required team of five specialists or none at all, which distributes the workload better.

## Initiatives taken to strengthen Health System

- **Human Resource Development:** E.g., Expansion of AIIMS, medical colleges, and nursing institutions. .
- **Digital Health Reforms:** E.g., Ayushman Bharat Digital Mission for digital health IDs and electronic health records.
- **Affordable Healthcare Initiatives:** E.g., Pradhan Mantri Jan Arogya Yojana (PM-JAY) to reduce out-of-pocket expenditure.
- **Public Health and Preventive Care:** E.g., National Health Mission (NHM) to strengthen rural and urban healthcare systems.
- **Governance and Regulatory Reforms:** E.g., National Medical Commission reforms to improve transparency and quality in medical education.

# Ageing and Senior Healthcare in India

India's Ageing Population and Need for Long-Term Senior Care Ageing is a natural process leading to decline in physical and mental capacity and increasing risk of diseases and death.









- It is also associated with life changes such as **retirement, relocation** and **loss of friends or partners**.
- India's elderly population is projected to reach **347 million (~20%) by 2050**, up from **8.6% in 2011**. (UNFPA 2023)

## Challenges Associated with Geriatric Healthcare

- **Hospital-Centric Model:** Systems treat individual diseases, while elderly people often suffer from multiple long-term health conditions requiring **continuous and integrated care**.
- **Mental Health & Social Isolation:** Issues like Dementia, Alzheimer's, and depression are often undiagnosed.
  - Preference for nuclear families has increased social isolation and "empty nest syndrome."
- **Financial Insecurity:** High out-of-pocket health expenditure frequently pushes households into **poverty**.
  - 78% of elderly lack pension coverage and 70% are economically dependent.
- **Feminization of Ageing:** Women live longer but often have fewer assets and lower access to healthcare, making them more vulnerable.
- **Others:** Fewer trained geriatricians, Lack of Social Security, Digital Access, Rural-Urban Divide etc.

## Way Forward

- **Strengthen Long-Term Care (LTC):** Develop integrated elderly-care systems including **skilled workforce, infrastructure, and financing**.
- **Strengthen Digital Healthcare:** Promote **teleconsultation** and integrated electronic health records under the Ayushman Bharat Digital Mission (ABDM).

SIGNIFICANCE OF GERIATRIC HEALTHCARE			
 <p><b>IMPROVED QUALITY OF LIFE</b></p> <p>Encourages dignity, self-reliance, and better wellbeing among elderly citizens. Helps seniors preserve confidence and independence in daily life.</p>	 <p><b>LOWER HEALTHCARE PRESSURE</b></p> <p>Timely and regular medical care helps avoid severe complications, minimizes hospital admissions, and lowers emergency healthcare needs.</p>	 <p><b>MANAGEMENT OF CHRONIC ILLNESSES</b></p> <p>Assists in the treatment and monitoring of conditions such as diabetes, hypertension, and dementia. Reports indicate that more than 75% of elderly people face chronic health issues, while insurance coverage remains limited (NITI Aayog, 2024).</p>	 <p><b>SOCIAL INCLUSION &amp; FAMILY ASSISTANCE</b></p> <p>Builds a caring and supportive atmosphere for older persons and reduces emotional as well as financial stress on families.</p>
MAJOR GOVERNMENT INITIATIVES FOR ELDERLY WELFARE			
<p><b>AYUSHMAN BHARAT - PM-JAY</b></p>  <p>Offers health coverage of up to ₹5 lakh annually for around 6 crore senior citizens aged 70 years and above.</p>	<p><b>NATIONAL PROGRAMME FOR HEALTH CARE OF THE ELDERLY (NPHCE)</b></p>  <p>Focuses on delivering affordable, accessible, and quality healthcare services tailored to the needs of ageing people.</p>	<p><b>SENIOR CARE AGEING GROWTH ENGINE (SAGE) PORTAL</b></p>  <p>Promotes innovation in elderly care by supporting startups and motivating young entrepreneurs to contribute to the silver economy.</p>	<p><b>RASHTRIYA VAYOSHRI YOJANA (RVY)</b></p>  <p>Supplies assistive devices and supportive aids to senior citizens affected by age-related disabilities.</p>

# JANANI Platform

Recently, Ministry of Health and Family Welfare launched JANANI (Journey of Antenatal, Natal and Neonatal Integrated Care) platform.



## About JANANI

- **Service-oriented digital platform** to comprehensively monitor and maintain digital health records of women during reproductive age.
- An **upgraded version** of existing **RCH (Reproductive and Child Health) portal**, creating a **longitudinal health record** by capturing key service delivery events across continuum of care.
- **Key Features:**
  - **Interoperability:** Enabling integration with national platforms like **U-WIN and POSHAN**.
  - **Unique Identifiers:** Like ABHA, Aadhaar (OTP and biometric) and mobile number for registration of beneficiaries.
  - **Others:** **QR-enabled digital Mother and Child Health (MCH) Cards**; **automated alerts** for high-risk pregnancies, **real-time dashboards** for supervisory review, etc.