NEXT IAS

THE CRUX

February Issue; 2025

Chief Editor

B. Singh (Ex. IES)

CMD, NEXT IAS & MADE EASY Group

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Compilation of UPSC relevant news from 1st February to 28th February 2025

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UNION BUDGET 2025-26

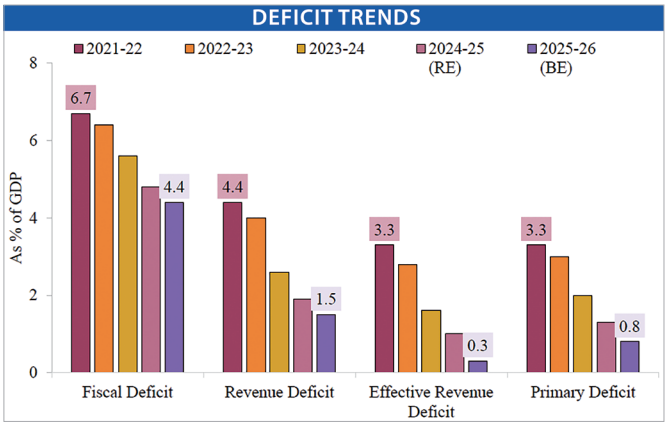
Recently, the Union Budget was presented by the Union Finance Minister, highlighting key measures to drive economic growth, boost renewable energy, enhance infrastructure, and support MSMEs.

About:

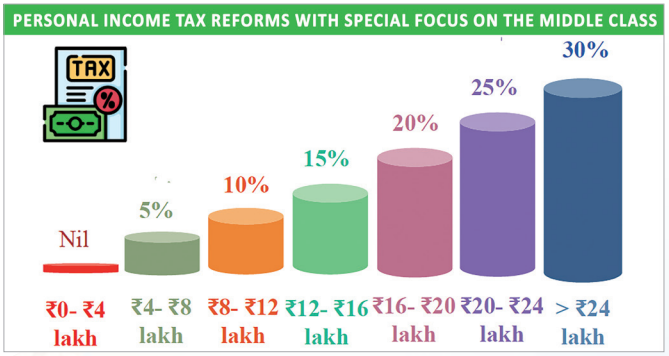
- **Annual Financial Statement (AFS)**
  - Mandated under **Article 112**, the **Annual Financial Statement** (Budget) provides estimates of **receipts and expenditure** for **2024-25**, along with estimates for **2023-24** and actuals for **2022-23**.
  - **It categorizes government accounts into three parts:**
    - **Consolidated Fund of India (CFI)** – Covers all government revenues, loans raised, and loan recoveries. Expenditures require **Parliamentary approval**. *(Article 266)*
    - **Contingency Fund of India** – An imprest fund under the **President's authority** to meet urgent unforeseen expenses. Requires **ex-post-facto Parliamentary approval** and is replenished from the **Consolidated Fund**. Current corpus: **₹30,000 crore**. *(Article 267)*
    - **Public Account of India** – Holds **trust funds** (e.g., Provident Funds, Small Savings) that do not belong to the government and must be repaid. **Parliamentary approval is not required** for withdrawals. *(Article 266)*
  - **The AFS also distinguishes between:**
    - **Revenue Account:** Regular government operations, subsidies, grants, and interest payments.
    - **Capital Account** – Expenditures on asset creation, investments, and loans.
  - **Revenue Budget Consists of:**
    - **Revenue Receipts** – Includes **tax revenue** (taxes, duties) and **non-tax revenue** (interest, dividends, fees).
    - **Revenue Expenditure** – Covers operational costs, subsidies, and grants. It does **not** create government assets.
  - **Capital Budget Comprises:**
    - **Capital Receipts** – Includes **market loans, borrowings, foreign loans, and recoveries of loans**.
    - **Capital Expenditure** – Covers **asset creation** (land, buildings, machinery), **investments**, and **loans to states, UTs, and public enterprises**.
  - **Demands for Grants (DG)**
    - Required under **Article 113**, these estimates detail government expenditures **from the Consolidated Fund of India** that require **Lok Sabha approval**.
    - Presented alongside the **Annual Financial Statement**.

Key Highlights

- **Fiscal Deficit:**
  - Revised fiscal deficit for FY25: 4.8%
  - Fiscal deficit target for FY26: 4.4%



- **Receipts for 2024-25:**
  - Total receipts (excluding borrowings): ₹31.47 lakh crore
  - Net tax receipts: ₹25.57 lakh crore
- **Expenditure for 2024-25:**
  - Total expenditure: ₹47.16 lakh crore
  - Capital expenditure: ₹10.1 lakh crore
- **Income Tax:** No income tax is payable for income up to **₹12 lakh** under the new tax regime (₹12.75 lakh for salaried taxpayers with standard deduction).
  - **Revised tax slabs** will be implemented across all income groups. Individuals earning above **₹24 lakh per year** will be taxed at **30%**.
  - The **tax return filing window** will be extended from **2 years to 4 years**.



- **Tax Reforms**
  - **Senior Citizens:** The **tax-free interest income threshold** for senior citizens has been **increased to ₹1 lakh**.
  - **TDS on Rent:** The TDS exemption limit on rent has been raised from ₹2.4 lakh to ₹6 lakh.
  - **Education Remittances: Tax collected at source (TCS) will be removed** for education-related remittances if funded through a loan from a **specified financial institution**.

- **Higher TDS:** Will apply **only in cases where PAN is not available**.
- **LRS Remittances:** The TCS threshold for remittances under RBI's Liberalized Remittance Scheme (LRS) has been increased from ₹7 lakh to ₹10 lakh.

➲ **Cess and Tariff Reforms**

- **Customs Tariff Simplification**
  - The government will streamline the **customs tariff structure** to correct **duty inversion**, support **domestic manufacturing**, and boost **exports**.
  - Seven more tariff rates will be eliminated, leaving only **eight**, including a **zero rate**.
- **Cess & Surcharge:** No more than **one cess or surcharge** will be levied, and the **social welfare surcharge** will be **exempted on 82 tariff lines**.
- **Customs Duty Exemptions:**
  - Full exemption on Basic Customs Duty (BCD) for cobalt powder, lithium-ion battery waste, scrap, and 12 other critical minerals.
  - 37 new medicines and 13 patient assistance programs added to the exemption list.
  - Six life-saving medicines to have a concessional 5% customs duty.
  - BCD fully extended on wet blue leather, and crust leather exempted from the 20% duty.
- **Tariff Reductions:**
  - **BCD on frozen fish paste** reduced from **30% to 5%** and on **fish hydrolysates** from **15% to 5%**.
  - **BCD on interactive flat panel displays** increased from **10% to 20%**.
  - BCD on open cell and components for LCDs & LEDs reduced to 5%.

➲ **Financial Reforms**

- **FDI in Insurance:** Foreign Direct Investment (FDI) limit for **insurance firms investing their entire premium in India** will be **raised from 74% to 100%**.
- **Central KYC Registry:** A **revamped central KYC registry** will be introduced to align regulations with **technological advancements** and the **global regulatory landscape**.
- **Ease of Doing Business:** The government will implement **faster approvals for company mergers** and expand related regulations, aiming for a **modern, trust-based regulatory framework**.
- **Investment Friendliness Index:** A **state-wise Investment Friendliness Index** will be launched in **2025** to promote **competitive cooperative federalism**.
- **Regulatory Evaluation:** Under the **Financial Stability and Development Council (FSDC)**, a mechanism will be established to **assess the impact of financial regulations** and improve sectoral **responsiveness and growth**.

➲ **Infrastructure Reforms**

- **Urban Challenge Fund**
  - A **₹1 lakh crore** fund will be launched to transform **cities into growth hubs**, support **redevelopment**, and improve **water & sanitation infrastructure**.
  - It will cover **up to 25% of the cost** for **bankable projects**, with at least **50% funding** required from **bonds, bank loans, or PPPs**.
- **PPP Initiatives:** Each **ministry** will present a **three-year PPP project list**, focusing on **three key proposals per ministry**. An initial **₹10,000 crore** is allocated for FY26.
- **Capital Expenditure:** The government will provide **₹1.5 lakh crore** in **interest-free loans** for capex and introduce **incentives** to drive **reforms**.
- **Affordable Housing**
  - **40,000 additional housing units** will be completed in **FY26**, and a **₹15,000 crore SWAMI Fund 2** will be established to support affordable housing projects.
  - **SWAMIH Fund** is a social impact fund specifically formed for completing stressed and stalled residential projects.
- **Medical Education Expansion**
  - **Increase in Medical Seats:** The government will add **10,000 medical undergraduate and postgraduate seats** over the next year as part of a broader initiative to increase the total number of seats by **75,000** over five years.
  - **Growth in Medical Seats:** Over the past decade, the number of **MBBS seats** has grown from **51,384** in 2014 to **1,12,112** in 2024, and **PG seats** have risen from **31,185** to **72,627**.
  - **Geographical Distribution:** There has been an imbalance in the distribution of medical seats, with some regions like **Karnataka** and **Puducherry** having more than their required share.
  - **New Norms:** To address this, the **National Medical Commission** has introduced a norm of **100 MBBS seats per 10 lakh population**.

➲ **Nuclear Energy Reforms**

- **Nuclear Energy Mission:** A **Nuclear Energy Mission** will be introduced to accelerate India's transition to **clean energy**, with a target to develop **100 GW of nuclear power** by **2047**.
- **Private Sector Involvement:** Amendments will be made to the **Atomic Energy Act** and the **Civil Liability for Nuclear Damage Act** to encourage **private sector participation**.
- **SMR Development:** A **₹20,000 crore** initiative will be launched for the **research and development of Small Modular Reactors (SMRs)**, with the goal of having at least **five indigenously developed SMRs** operational by **2033**.

➲ **MSME Reforms**

- **Growth Contribution:** MSMEs are recognized as the **second engine of growth** in India, contributing **45% of the country's exports**.

- **Support Initiatives:** To boost their development, the Finance Minister introduced:
  - **Customized credit cards** for MSMEs.
  - A **fund of funds** for **startups**.
  - An **expanded fund-of-funds (f-o-f)** with a broader scope to improve **capital access**.

Revision in Classification Criteria for MSME

₹ in Crore	Investment		Turnover	
	Current	Revised	Current	Revised
Micro Enterprises	1	2.5	5	10
Small Enterprises	10	25	50	100
Medium Enterprises	50	125	250	500

- **Investment & Turnover Limits:** The government will **increase MSME investment** and **turnover limits** by **2.5 times** and **2 times**, respectively, to drive their growth and enhance **operational efficiency**.

➲ **Agriculture Reforms**

- **Han Dhanya Krishi Yojana**
  - A new initiative under the **Prime Minister Krishi Yojana** will focus on **100 districts** with low productivity, moderate crop intensity, and limited credit access.
  - It will promote **crop diversification**, improve **storage**, enhance **irrigation**, and facilitate both **short and long-term credit** for farmers, benefiting an estimated **1.7 crore farmers**.
- **Pulses Self-Reliance Mission:** A 6-year mission will aim for self-reliance in pulses, especially tur and masoor, alongside strengthening domestic production of edible oils and seeds.
- **Makhana Board:** A Makhana Board will be established in Bihar to enhance production, processing, and market linkages, with support for farmers through FPOs.
- **Kisan Credit Cards:** The government will increase loan limits for Kisan Credit Cards (KCC) from ₹3 lakh to ₹5 lakh, continuing to support 7.7 crore farmers, fishermen, and dairy farmers with short-term credit.
- **High Yielding Seeds Mission:** The government will launch a National Mission to develop high-yield, pest-resistant, and climate-resilient seeds, ensuring availability of 100 seed varieties by 2024.
- **Fisheries Growth:** India's fisheries sector will receive a framework for sustainable growth, focusing on the Indian Exclusive Economic Zone and Andaman & Nicobar Islands.
- **Cotton Productivity Mission:** A 5-year mission will aim to improve cotton productivity, promote ELS cotton varieties, and provide scientific support aligned with the Farm to Fiber to Fashion vision.
- **Urea Production:** The government is reviving three dormant urea plants and setting up a new urea plant in Assam to reduce import dependency.
- **India Post for Rural Economy:** India Post, with its vast network of rural post offices and Dak Sevaks, will be transformed into a key player for artisans, entrepreneurs, and MSMEs, driving rural economic growth.

➲ **Modified Interest Subvention Scheme (MISS)**

- **Loan Limit Increase:** The loan limit under **MISS** will be raised from **₹3 lakh to ₹5 lakh**.
- **Current MISS Scheme:** Farmers engaged in **Agriculture** and allied activities can currently obtain **Kisan Credit Card loans** up to ₹3 lakh at an interest rate of **9%**, with the government providing **2% interest subvention**, reducing the effective rate to **7%**. An additional **3% concession** for timely repayment further reduces the interest to **4% per year**.
- **Post-Harvest Loans:** The scheme also applies to **post-harvest loans** (for up to **six months post-harvest**) for small and marginal farmers with Kisan Credit Cards, helping prevent **distress sale** of their produce.

➲ **Footwear & Leather Sector:** New new scheme to enhance **productivity, quality**, and **competitiveness** in the **footwear and leather sector**, focusing on **design, component manufacturing**, and machinery for both **non-leather** and **leather footwear**.

- This initiative is expected to **create 22 lakh jobs**, generate **₹400 crore**, and boost **exports** to over **₹1.1 lakh crore**.

➲ **Toy Sector:** A new scheme will be launched to position India as a global hub for toys, with a focus on developing clusters, improving skills, and building a sustainable manufacturing ecosystem for high-quality, innovative toys.

➲ **Investing in People**

- **Focus on Growth:** The Finance Minister highlighted **investment in people** as the **third engine of growth**, emphasizing **people**, the **economy**, and **innovation**.
- **Nutritional Support:** The government is prioritizing the **Sashakt Anganwadi** and **Poshan 2.0 programs** to provide nutritional support to over **8 crore children**, **pregnant women**, **lactating mothers**, and **20 lakh adolescent girls** in **aspirational districts** and the **Northeast**.
- **Educational Infrastructure:** Infrastructure will be expanded in **5 IITs** established post-2014, adding space for **6,500 more students**.
- **Skilling Initiatives: 5 National Centres of Excellence for skilling** will be established to support workforce development.
- **Gig Worker Support:** The government plans to issue **identity cards** and register **gig workers** on the **e-Shram portal**, with an aim to assist **1 crore workers**.
- **Support for SC/ST Women Entrepreneurs**
  - **New Scheme:** A new scheme will be launched to support **5 lakh SC/ST women entrepreneurs** by providing **term loans up to ₹2 crore** over the next five years.

- **Learning from Stand-Up India:** The new scheme will incorporate lessons from the **Stand-Up India scheme**, which was launched on **April 5, 2016**, to empower women entrepreneurs, particularly from the **SC/ST communities**.
- **Stand-Up India Scheme:** The scheme offers loans between **₹10 lakh and ₹1 crore** to at least **one SC or ST borrower** and one woman borrower per bank branch for setting up greenfield enterprises in manufacturing, services, or trading, as well as agriculture-related activities.
- **Extension:** The scheme was extended until **2025**, and it is not clear whether the new scheme will be integrated with or replace the existing one.
- **Loan Data:** As of **June 2024**, **40,002 SC women** and **13,424 women** have received loans under the **Stand-Up India scheme**.

➲ **Aviation Reforms**

- **UDAN Scheme:** The **UDAN scheme** has successfully connected **1.5 crore middle-class people** to **88 airports** through **619 routes**.
- **Expanded UDAN:** A **modified version** of UDAN will be launched, extending to **120 new destinations** and aiming to accommodate an additional **4 crore passengers**.
- **New Airports: Greenfield airports** will be developed in **Bihar** to further enhance regional connectivity.

BASICS ABOUT THE BUDGET

➲ **Introduction**

- **Origin:** The term 'budget' originates from the Old French word 'bougette', meaning a pouch or bag.
- **Traditional Presentation:** Budget documents were traditionally carried in a leather bag or briefcase.
- **Definition:** Budget is the government's estimated financial statement for a year, running from April 1 to March 31.
- **Responsible Division**: The Budget Division of the Department of Economic Affairs, Ministry of Finance, prepares the Budget.

➲ **Old and New Trends:**

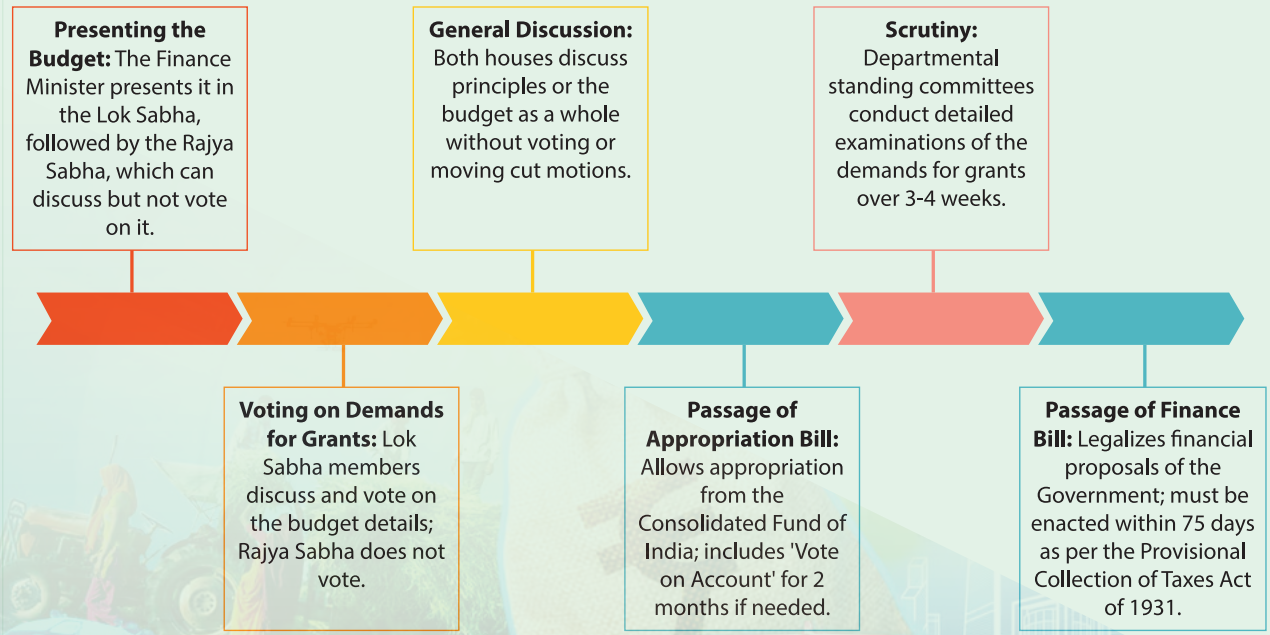
- **Change in Tradition:** From 2019, the briefcase was replaced with a 'Bahi-Khata' or a traditional ledger wrapped in red cloth.
- **Merger of Rail and General Budget:** The Rail Budget was merged with the Union Budget from 2017-18, based on the recommendations of the Bibek Debroy Committee. This ended a 92-year-old practice initiated by the Acworth Committee in 1924.

➲ **Constitutional Provisions:** Annual Financial Statement is provided for under Article 112 of Part V of the Constitution.

➲ **Official Term:** Known officially as the Annual Financial Statement, not explicitly called 'budget' in the Constitution.

NOTE: If the Lok Sabha fails to pass the Annual Financial Statement, the Prime Minister tenders the resignation of the Council of Ministers.

STAGES OF PASSING THE BUDGET



DIFFERENCE BETWEEN REGULAR AND INTERIM BUDGET		
Definition	A detailed financial statement for a full fiscal year.	A temporary financial statement, usually in an election year. There is no constitutional provision for an interim budget.
Purpose	Outlines the government's revenue and expenditure for the entire year.	Primarily for seeking Parliament's approval for essential expenditure for a part of the year.
Duration	Covers the entire financial year.	Covers a part of the fiscal year, until a new government presents the full budget.
Expenditure	Includes a complete account of expenses and allocations.	Only essential expenditures are covered.
Policy Decisions	Contains major policy decisions, new schemes, and long-term plans.	Generally avoids major policy decisions or new schemes.
Typical Occurrence	Usually presented at the beginning of the financial year.	Occurs when the tenure of the current government is ending and new elections are due.

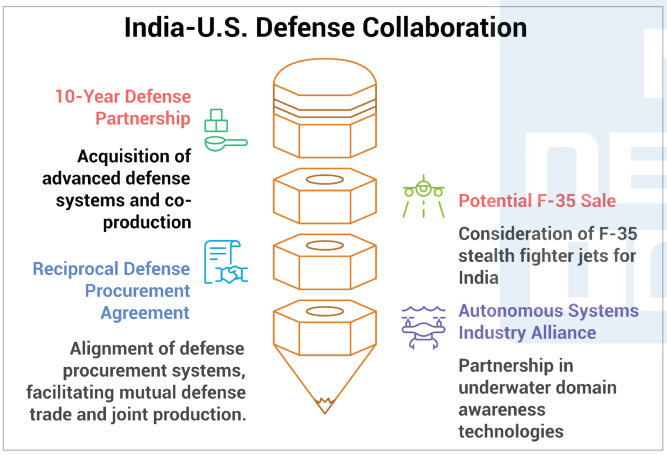
KEY TERMS	
Capital Expenditure	➲ Expenditure of a capital nature is broadly defined as expenditure incurred with the object of either increasing concrete assets of a material and permanent character or of reducing recurring liabilities.
Capital Receipt	➲ Capital receipt comprises of loans raised by the Government, borrowing from the Reserve Bank of India and loans taken from foreign Governments/institutions. It also embraces recoveries of loans ➲ advanced by the Government and sale proceeds of government assets, including those realized from divestment of Government equity in PSUs.
Effective Revenue Deficit	➲ Effective Revenue Deficit is the difference between revenue deficit and grants for creation of capital assets. It can be interpreted as the difference between the government's current expenditure (on revenue account) and revenue receipts less grants for creation of capital assets which is recorded as revenue expenditure. ➲ Effective Revenue Deficit = Revenue Expenditure - Grants for Capital Expenditure
Fiscal Deficit	➲ Excess of total disbursements from the Consolidated Fund of India, excluding repayment of debt over total receipts in the Fund, excluding the debt receipts, during a financial year. ➲ Fiscal Deficit = Total Expenditure - Total Revenue (excluding borrowings)
Revenue Deficit	➲ Excess of revenue expenditure over revenue receipts.
Revenue Expenditure	➲ Charges on maintenance, repair, upkeep and working expenses, which are required to maintain the assets in a running order and also all other expenses incurred for the day to day running of the organisation, including establishment and administrative expenses are classified as revenue expenditure. Grants given to State/UT Government and other entities are also treated as revenue expenditure, even if some of the grants may be meant for creating capital assets.
Revenue Receipts	➲ These include proceeds of taxes and duties levied by the Government, interest and dividend on investments made by the Government, fees and other receipts for services rendered by the Government.
Primary Deficit	➲ It is a financial metric that assesses a government's fiscal health by focusing on the fiscal gap excluding interest payments on existing debt. ➲ It indicates the government's ability to meet its current spending needs without relying on additional borrowing to cover interest expenses. ➲ Primary Deficit = Fiscal Deficit–Interest Payments on Previous Borrowings

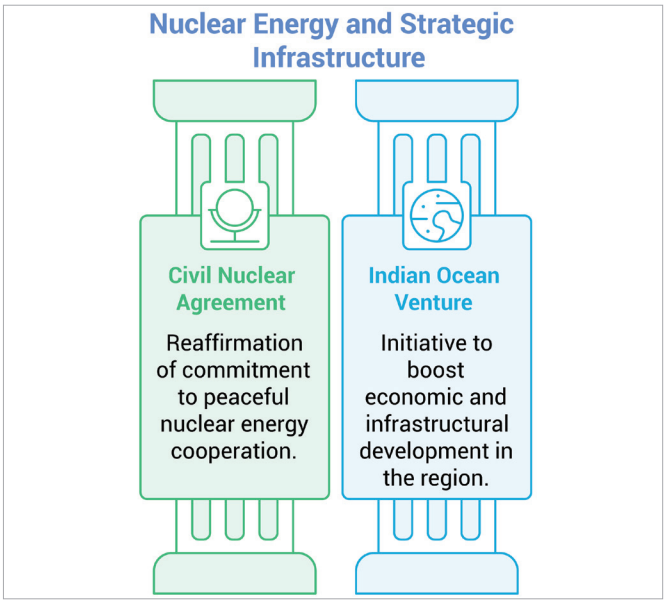
INDIA-USA RELATIONS

The President of the United States of America, Donald J. Trump hosted the Prime Minister of India, Shri Narendra Modi for an Official Working Visit in Washington, DC on February 13, 2025.

Key Outcomes of PM Modi's 2025 US Visit

- **Trade and Economic Cooperation:**
  - **Mission 500**: India and the US set a target to double bilateral trade from $200 billion to $500 billion by 2030.
  - **Bilateral Trade Agreement (BTA)**: Plans to negotiate the first phase of a multi-sector trade deal by fall 2025, addressing tariff disputes, market access, and regulatory barriers.
  - **U.S.-India COMPACT (Catalyzing Opportunities for Military Partnership, Accelerated Commerce & Technology) for the 21st Century:** To drive transformative change across key pillars of cooperation.
    - Under this initiative, they committed to a results-driven agenda with initial outcomes this year to demonstrate the level of trust for a mutually beneficial partnership.





- **Science, Technology, and Innovation:**
  - **TRUST Initiative:** A renamed and expanded version of iCET, boosting US-India collaboration in AI, semiconductors, cybersecurity, quantum computing, biotech, space, and clean energy.
  - **INDUS-Innovation:** A US-India industry and academic collaboration platform, modeled after INDUS-X, to promote investments in emerging technologies like space and renewable energy.
  - **Strategic Mineral Recovery Initiative:** Joint efforts to recover and process critical minerals (lithium, cobalt, rare earths) from heavy industries, ensuring supply chain security for clean energy and electronics manufacturing.

Significance:

- **Geo-Strategic:** India and the US have built a robust and evolving partnership, transitioning from **'estranged democracies' to 'engaged democracies'**. This transformation has seen both nations collaborate on strategic issues like regional stability, military cooperation, and **countering the influence of China**. India is considered a key partner for the US in maintaining balance in the Indo-Pacific region.
- **QUAD Cooperation:** India is an integral part of both the **Eastern Quad (USA, India, Japan, Australia) and the Western Quad (Israel, India, UAE, USA).**
  - These groupings focus on securing a rules-based order in the Indo-Pacific, promoting freedom of navigation, tackling climate change, and offering alternatives to debt financing in the region. The cooperation strengthens regional security and economic prosperity.
- **Multilateral Cooperation:** India and the US closely cooperate in various multilateral forums, such as the UN, G-20, and ASEAN.
  - The US is a strong supporter of India's bid for permanent membership in the UNSC and India's entry into the Nuclear Suppliers Group (NSG), reflecting the depth of their diplomatic and strategic alignment.
- **Geoeconomics:**
  - In FY24, the bilateral trade between India and the US stood at a record US$ 118.2 billion as against US$ 128.78 billion in FY22.
  - In FY24, India had a trade surplus of US$ 36.8 billion with the US.
  - Of the total trade in FY24, Indian exports to the US stood at US$ 77.5 billion, while American exports to India stood at US$ 40.7 billion.
  - USA is the **3rd largest investor** in India with cumulative **FDI inflows of US$ 67.76** billion from 2000 to 2024.

- **Defense and Security Cooperation:** Defense cooperation is a cornerstone of India-US relations, including joint military exercises like Yudh Abhyas (Army) and Malabar (Navy).
  - Both countries have signed key defense agreements **(GSOMIA, LEMOA, COMCASA, BECA)**, which promote closer military ties, technology sharing, and secure communication.
- **Science and Technology:** India and the US are partners in scientific and technological advancement, including space exploration, artificial intelligence, and healthcare.
  - The **NISAR (NASA-ISRO Synthetic Aperture Radar) project** is one of the notable collaborations, which aims to observe Earth's surface with high resolution and provide data for environmental and societal applications.
- **Diaspora Influence:** The Indian-American diaspora, with over 4.4 million people, plays a crucial role in strengthening US-India relations.
  - Prominent figures such as **Sundar Pichai (CEO, Google), Satya Nadella (CEO, Microsoft), Vivek Ramaswamy (entrepreneur and politician), Indra Nooyi (former CEO, PepsiCo), and Neal Katyal (former US Solicitor General)** have made significant contributions to the US economy, particularly in technology, business, and law.
  - Their leadership, along with advocacy efforts from influential organizations like **US-India Business Council (USIBC) and Indian-American Impact Fund**, has been instrumental in shaping favorable policies, fostering trade, and enhancing diplomatic cooperation between the two nations.

Challenges:

- **Trade Imbalances:** The US continues to face a significant trade deficit with India, largely due to differences in tariffs, market access, and trade policies. In FY24, US had a trade deficit of US$ 36.8 billion with the US.
  - Addressing these imbalances remains a key challenge for both nations to strengthen economic ties further.
- **Intellectual Property Rights:** Disputes over intellectual property rights (IPR), especially concerning pharmaceutical patents and access to affordable medicines, have occasionally strained bilateral relations. The US has raised concerns about patent violations and inadequate protection of IPR in India.
- **Visa Restrictions:** Restrictions on H-1B visas, which affect Indian professionals, particularly in the tech industry, have been a contentious issue. These visa policies hinder the mobility of skilled labor and impact the growth of the technology sector in both countries.
- **Diverging Strategic Objectives:** While both nations share common goals, such as regional stability, there are differences in their strategic priorities. India's relations with Iran and Russia, for instance, sometimes do not align with US interests, creating diplomatic complexities.
- **Human Rights Concerns:** Differences over issues like religious freedom and human rights can occasionally strain the relationship.
  - The US has raised concerns about religious tolerance in India (Freedom House Report), while India has pointed out human rights issues within the US, creating tensions in diplomatic dialogue.
- **Data Localization:** Differing approaches to data privacy and data localization pose significant challenges to digital trade. India's regulations on data localization, which require certain data to be stored within the country, have led to concerns from US tech companies.
- **Regional Security:** India's complex relationships with neighboring countries like Pakistan and Afghanistan continue to influence its diplomatic relations with the US.
  - The evolving situation in Afghanistan and ongoing security challenges in the region create strategic uncertainties for both countries.

Way Forward:

- **Deepened Economic Cooperation:** Both countries should prioritize deepening their economic ties, tackling trade barriers, and diversifying collaboration across key sectors like technology, agriculture, and clean energy.
  - Increased business-to-business interactions and efforts to create favorable trade policies will help mitigate imbalances.
- **Strategic and Security Collaboration:** Building on existing defense agreements, India and the US should enhance their military collaboration through joint exercises, intelligence sharing, and technology exchanges.
  - A more coordinated approach to counter-terrorism and maritime security can further strengthen the strategic partnership.
- **Climate Change and Clean Energy:** India and the US should collaborate on clean energy technologies, focusing on renewable energy, climate resilience, and carbon reduction. Joint research initiatives and the exchange of best practices in addressing climate challenges will play a critical role in global climate efforts.
- **Science, Technology, and Innovation:** Both nations have the potential to lead global advancements in AI, healthcare, space exploration, and advanced manufacturing.
  - By fostering joint research projects, creating innovation hubs, and facilitating technology transfers, India and the US can drive economic growth and technological progress.
- **Global Governance:** India and the US should work together in advocating for multilateralism and reforming global governance structures. Cooperation in international forums like the UN, G20, and WTO will amplify their collective influence on global issues like peacekeeping, sustainable development, and trade reform.

PARIS AI SUMMIT, 2025

India's Prime Minister visited France to co-chair the Paris Artificial Intelligence (AI) Action Summit 2025.

About the Summit:

- The AI Action Summit is a global platform uniting world leaders, policymakers, and industry experts to discuss AI governance, ethics, and societal impact.
  - The 2025 summit in **Paris** follows the **Bletchley Park Summit (UK, 2023)** and the **Seoul Summit (South Korea, 2024).**

Key Outcomes of the Paris AI Action Summit 2025

- **Joint Declaration on Inclusive and Sustainable AI:** 58 countries, including **India, China, and the EU**, signed a statement promoting **inclusive and sustainable AI** for global well-being.
  - The **US and the UK did not sign**, citing concerns over excessive AI regulations.
- **Public Interest AI Platform & Incubator:** A new initiative launched to bridge public-private AI collaborations and build trust in AI through data transparency, capacity building, and financing.
- **Human-Centric AI & Global Priorities:** Advocated ethical, safe, and inclusive AI while addressing AI-driven inequalities.
  - Key priorities include AI accessibility, transparency, job creation, sustainability, and governance.
  - Emphasized reducing the digital divide, ensuring AI safety, promoting green AI, and fostering international cooperation.
- **Alignment with Global AI Initiatives:** Stressed coordination with existing AI frameworks such as UN General Assembly Resolutions, the Global Digital Compact, UNESCO AI Ethics Recommendations, and AI policies from the OECD, G7, and G20.
- **India's Stance:** Advocated open-source and sustainable AI, with a focus on clean energy and workforce upskilling.
  - As **2024 lead chair of the Global Partnership on AI (GPAI)**, India aims to position **GPAI as the key platform** for responsible AI development.

About Artificial Intelligence (AI)

- **Definition:** AI is a branch of computer science focused on creating systems capable of performing tasks that typically require human intelligence.

Types of Artificial Intelligence

- **Narrow or Weak AI:** AI designed for specific tasks, without human-like consciousness or awareness.
  - ***Example:*** Chatbots, recommendation systems.
- **Generative AI:** AI that creates new content, such as images, text, or audio, often resembling human-generated content.
  - ***Example:*** GPT-3 (Generative Pre-trained Transformer 3) by OpenAI.
- **Frontier AI:** AI that pushes technological boundaries, incorporating groundbreaking innovations in artificial intelligence.

Outcomes of Bletchley Park Summit (UK, 2023)	
Outcome	**Description**
Bletchley Park Declaration	Signed by 28 countries, emphasizing safe, human-centric, and responsible AI.
Safety Commitment	Nations pledged to monitor, assess, and mitigate AI risks, particularly in frontier AI models.
Collaboration	Strengthened global cooperation on AI regulation through deliberations.
Tech Companies Involvement	Encouraged private sector accountability in AI.
AI as Public Good	Advocated for AI's social and economic benefits.

Outcomes of Seoul Summit (South Korea, 2024)	
Outcome	**Description**
Safety Network	Nations reaffirmed commitments to AI safety and proposed a global network of AI Safety Institutes.
Regulatory Frameworks	Discussions on AI governance and compliance, focusing on risk assessment and compliance mechanisms.
Cross-Border AI Research & Development	Promoted interoperable frameworks and data-sharing agreements.
Ethical Guidelines	Strengthened global AI ethics principles, including bias reduction, transparency, and accountability.
Workforce Transition	Addressed AI's impact on jobs and called for investment in workforce upskilling.

- ***Example:*** Quantum AI, which leverages quantum computing to solve complex problems at unparalleled speeds.

- **Multimodal AI:** AI that processes and understands multiple data types, such as text, images, videos, and audio, for more comprehensive decision-making.

Advantages of AI:

- **Space Exploration & Research:** AI helps in **autonomous spacecraft, robotic missions, and analyzing data** in extreme environments.
  - ***Example:*** NASA's **Curiosity and Perseverance rovers** use AI for navigation and scientific analysis.
- **Continuous Learning & Adaptability:** AI can **learn from new data and improve performance** over time.
  - ***Example:*** AI in **healthcare diagnostics** improves as it processes more medical data, enhancing accuracy.
- **Improved Precision & Accuracy:** AI analyzes **large datasets** with minimal errors, improving outcomes in **diagnostics, predictions, and decision-making,**
  - ***Example:*** AI **telescopes detect exoplanets** more precisely than traditional methods.
- **Enhanced Decision-Making:** AI provides **data-driven insights** by recognizing trends, patterns, and risks.
  - ***Example:*** AI models in **weather forecasting** predict climate changes accurately.
- **Innovation & Scientific Breakthroughs:** AI accelerates discoveries across healthcare, technology, and science.
  - ***Example:*** **DeepMind's AlphaFold** revolutionized **drug discovery** by predicting protein folding.
- **Increased Efficiency & Productivity:** AI boosts industrial automation and workflow optimization.
  - ***Example:*** AI-powered **robots in Tesla's Gigafactories** enhance precision in assembly lines.

Disadvantages of AI:

- **Security Risks:** AI is vulnerable to **cyber-attacks** and can be misused for malicious activities.
- **Lack of Transparency (Black Box Issue):** Some AI models, like deep learning networks, are difficult to interpret, making their decisions hard to explain.
- **Job Displacement:** AI automation may replace human jobs, causing unemployment.
  - ***Example:*** The **World Economic Forum** predicts AI could **eliminate 85 million jobs** by 2025.
- **Privacy & Ethical Concerns:** AI relies on data collection, raising privacy risks and issues like accountability in accidents.
- **Overdependence on AI:** Excessive reliance may lead to reduced human creativity and problem-solving skills.
- **High Costs & Maintenance:** AI systems require **large investments** in infrastructure and **ongoing updates** to stay efficient.

Steps Taken at Global and National Level

Global Level:

- **Global Partnership on Artificial Intelligence (GPAI):** Established in June 2020, with 28 member countries and the EU (including India).
  - Encourages collaboration across science, industry, civil society, and governments to advance AI research and responsible deployment.
- **New Delhi Declaration (GPAI):**
  - Acknowledges AI's opportunities and risks.
  - Reaffirms commitment to human dignity, democratic values, and rights.
  - Promotes trust, transparency, accountability, and inclusiveness in AI governance.
- **European Union's AI Act:** Establishes strict regulations for high-risk AI applications, prioritizing safety, transparency, and fundamental rights.

National Level:

- **National Strategy for Artificial Intelligence (India):** Formulated by NITI Aayog, this framework outlines AI ethics, development, and applications in critical sectors, ensuring responsible AI use.
- **AIRAWAT (AI Research, Analytics, and Knowledge Assimilation Platform):** Developed by NITI Aayog, AIRAWAT integrates cloud computing, big data analytics, and AI infrastructure to facilitate cutting-edge research and power-efficient AI computing.
- **YUVAi (Youth for Unnati and Vikas with AI) Scheme:** Launched by National e-Governance Division (NeGD) & Intel India, this initiative equips students from classes 8 to 12 with AI skills, fostering human-centric AI design and awareness.
- **Digital Personal Data Protection Act, 2023 (India):** Introduces data protection regulations, impacting AI development by safeguarding personal information and privacy rights.

Way Forward:

- **Global AI Collaboration & Standards:** Countries should work together to set ethical AI policies and ensure fairness and security. ***Example:*** Global Partnership on AI (GPAI) promotes responsible AI development.
- **Education & Workforce Training:** AI education and upskilling programs can help people adapt to job market changes.
- **Domain-Specific AI Applications:** AI should be applied in areas like healthcare, finance, and education to solve real-world problems.
- **Ethical & Transparent AI:** AI should be fair, accountable, and unbiased, ensuring privacy protection and safety.
- **Quality & Accessible Data:** AI models need high-quality and diverse data for better accuracy. Improving data-sharing policies can accelerate AI development globally.

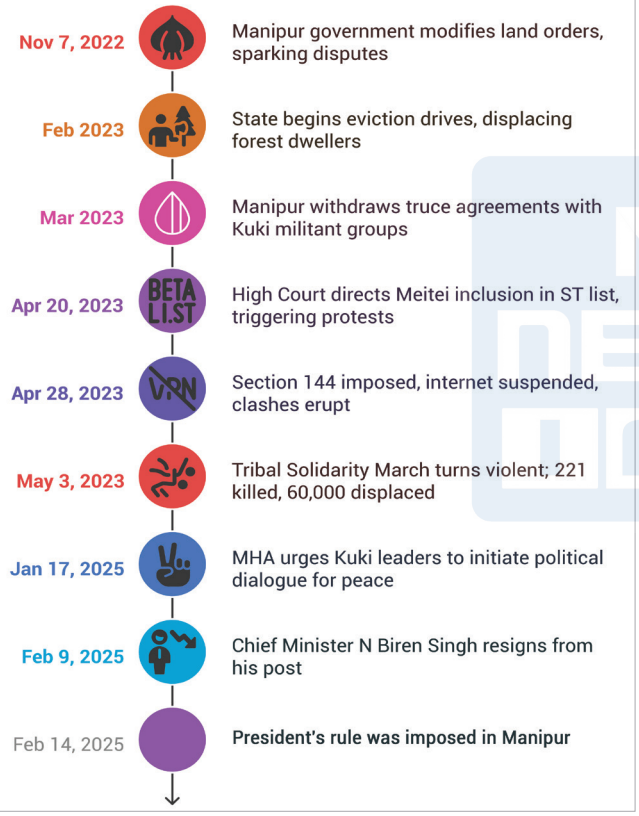
PRESIDENT RULE IN MANIPUR

The President of India has imposed President's Rule in Manipur for the 11th time, the highest for any state.

About President Rule:

- Following the resignation of Manipur Chief Minister N Biren Singh on February 9, the failure to reach a consensus on a new CM led to a governance vacuum.
- As a result, the President's Rule was imposed, ensuring administrative stability, according to a Home Ministry notification.

Timeline of Manipur Conflict: 2022-2025



Reasons Behind the Manipur Crisis

- **Relative deprivation due to Land Ownership:**Meiteis, forming **52% of the population**, are restricted to **10% of the state's land**, while **tribals control the hill districts**. **Meiteis cannot buy land in tribal areas**, whereas **tribals can purchase land in Imphal Valley**, leading to **land insecurity and resentment**.
- **Political Imbalance:** Meiteis dominate **state politics**, holding **40 out of 60 Assembly seats**, while the **hill districts, covering 89% of Manipur's land, have only 20 MLAs**. This disparity fuels tribal demands for **greater political representation**.
- **Influx of Myanmar Refugees:** The **Myanmar coup led to a refugee crisis**, particularly in **Churachandpur district**. Meitei leaders claim **unregulated migration** has altered demographics and contributed to **illegal settlements and poppy cultivation**.
- **Rise in Insurgency and Drug Trade:** Manipur's **proximity to the Golden Triangle** makes it a hub for **drug trafficking and cross-border crime**. The presence of **armed insurgent groups and criminal networks** has worsened law and order, intensifying ethnic tensions.
- **Tribal Demands for Autonomy: Kuki and Naga groups seek separate administrative units**, citing historical autonomy and cultural identity. These demands conflict with the **Meitei-led state administration**, leading to recurring clashes.

Impacts of President's Rule

- **Executive Powers:** The **President assumes control over state governance**, with the **Governor acting as the administrative head**, assisted by the **Chief Secretary and appointed advisors**.
- **Legislative Powers:** The **State Legislature is either suspended or dissolved**, and its **law-making authority is transferred to Parliament** or a designated body under the President's direction.
- **Validity of Laws:** Any **laws enacted during President's Rule remain in effect** unless repealed or modified by the newly elected state legislature.
- **Financial Control:** The **President can approve expenditures from the State Consolidated Fund**, subject to **subsequent approval by Parliament**.

Various Judgements of Supreme Court

- **SR Bommai Case (1994):** The **Supreme Court ruled that Article 356 is subject to judicial review**, and a **state government can only be dismissed based on a floor test**, not merely on the **Governor's recommendation**.
- **Sarbananda Sonowal Case (2005):** The **scope of Article 355 was expanded**, allowing the **Union government to take broader actions** to ensure states function in accordance with the Constitution.
- **Rameshwar Prasad Case (2006):** The **dissolution of the Bihar Assembly without a floor test** was deemed **unconstitutional**, with the SC criticizing the **political misuse of Article 356**.
- **Limitations on Article 356:** The Court clarified that **Article 356 cannot be used to tackle social issues like defection**.
  - **Article 361 does not grant immunity** from judicial scrutiny, allowing courts to review the **validity of actions taken under President's Rule**.

PRESIDENT'S RULE
All You Need to Know

- In India, President's rule is the **suspension of state government & imposition of direct central government rule in a state**
- **Article 356** of the Indian constitution has the provision of the President rule

IT CAN BE IMPOSED IN A STATE

1. **On recommendation of Governor in case of failure of constitutional machinery**
2. **If a state legislature is unable to function according to constitutional provisions**

EXECUTIVE AUTHORITY
Exercised through the centrally appointed Governor

DURATION
6 Months A maximum of 3 years by approval of Parliament after every 6 months

PARLIAMENT'S ROLE
Every such proclamation must get Parliament's approval in 2 months from the date of issue

TERMINATION
By President, any time (s)he thinks fit (Parliament's approval not needed)

NEW PROVISION
The 44th Constitutional Amendment Act of 1978 states that the President's rule can't be imposed in any state beyond 1 year unless:

1. **A proclamation of National Emergency is in operation**
2. **The Election Commission certifies that the continuance of President rule is necessary to hold Assembly elections**

Recommendations on the Imposition of President's Rule

- **Use as a Last Resort (Sarkaria Commission, 1987): Article 356 should be invoked only in extreme cases** when all other options to resolve a constitutional crisis have failed. It should not be used as a routine measure to dismiss state governments.
- **Localized Emergency Provisions (Punchhi Commission, 2010):** Instead of imposing **statewide President's Rule**, the **Governor should be empowered to enforce emergency provisions in specific districts or regions** for up to **three months** under **Articles 355 and 356**.
- **Regulated & Limited Use (NCRWC, 2000): Article 356 should remain in the Constitution**, but its **use must be strictly limited**. The provision should also allow **continuation of the President's Rule without an emergency** if elections **cannot be conducted on time**.
- **Transparent Governor's Report (Inter-State Council, Article 263):** Any **recommendation for the President's Rule must be detailed and well-explained** to prevent misuse. The Governor should provide **clear justifications** for dissolving a state government.
- **Advance Warning to the State Government:** Before imposing the President's Rule, the **concerned state must be given an official warning** to rectify governance failures, ensuring that Article 356 is not misused for political reasons.
- **Parliamentary Oversight & Special Majority:** The **approval process for the President's Rule should require a special majority** in Parliament rather than a simple majority, ensuring a **broader consensus** before dismissing an elected state government.

APPOINTMENT OF NEW CEC

President Droupadi Murmu appointed Gyanesh Kumar as the Chief Election Commissioner (CEC) of India.

Key Provision of Section 4 of CEC & other ECs Act, 2023

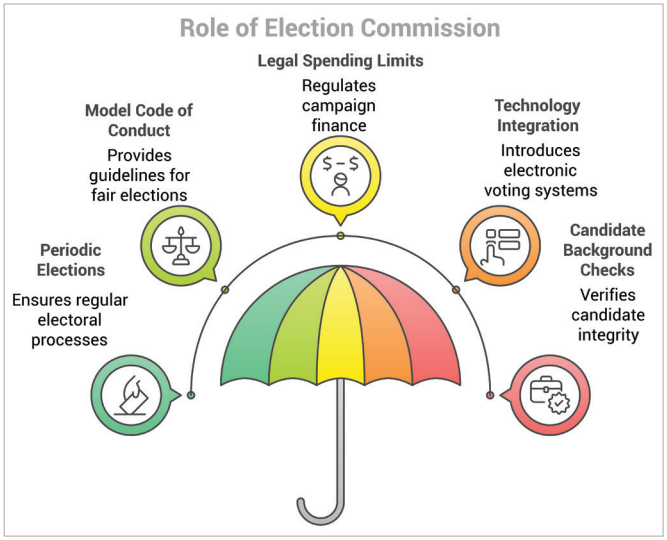
- **Appointment Authority**: The President appoints the CEC and ECs by warrant under his hand and seal.
- **Selection Committee**: The appointment is based on the recommendation of a Selection Committee comprising:
  - The Prime Minister (Chairperson)
  - The Leader of Opposition in the Lok Sabha
  - A Union Cabinet Minister nominated by the Prime Minister.
  - **Note:** This time around the third member was the **Minister of Home Affairs**.
- **Search Committee**: A **Search Committee**, led by the **Cabinet Secretary**, will recommend a **panel of candidates** for the Selection Committee.
  - Candidates must have **experience at the level of Secretary to the central government** or an equivalent position.
- **Service Conditions**: The **salary and service conditions** of the **CEC and ECs** would be **equivalent to those of a Supreme Court Judge**.
- **Term of Office**: The CEC and ECs serve for a tenure of six years or until they reach the age of 65, whichever is earlier.
- **Reappointment**: They are not eligible for re-appointment after completing their term.

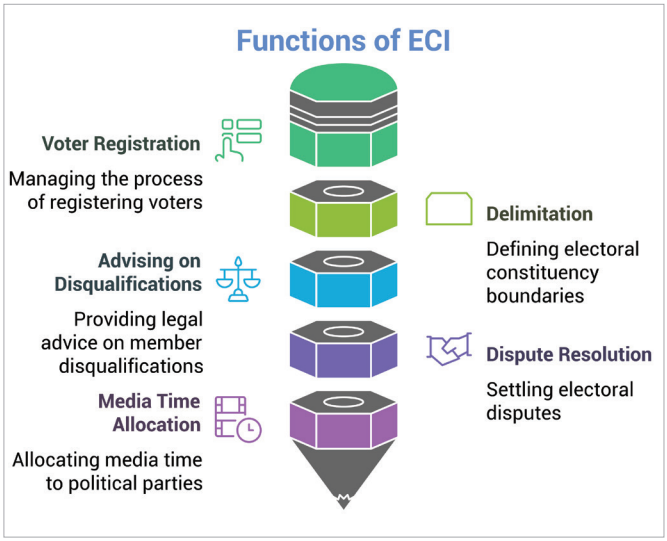
Other Provisions of CEC and other ECs Act, 2023

- **Eligibility criteria:** The CEC and ECs must: (i) be persons of integrity, (ii) have knowledge and experience in the management and conduct of elections, and (iii) be or have been Secretary (or equivalent) to the government.
- **Removal Process:** The Act **retains Article 324(5)** of the Constitution, ensuring **the CEC can only be removed in the same manner as a Supreme Court Judge**.
  - **Election Commissioners (ECs) can only be removed based on the CEC's recommendation**, providing an additional layer of protection.
- **Legal Protection for CEC & ECs (Section 16 of the Act):** Courts cannot hear either Civil or Criminal Cases against a current or former CEC or EC for acts done or words spoken in the discharge of official duty or function.

Need of the CEC and other ECs Act, 2023

- **Impartiality and Fairness**: The Election Commissioner oversees the electoral process, ensuring fair elections and unbiased voter registration. Independence from political influence is crucial to uphold equal opportunities for all parties and protect the democratic right to vote.
- **Public Confidence in the Institution**: A transparent and fair Election Commission strengthens public trust in the electoral system.
  - Independence in decision-making encourages greater voter participation and acceptance of election results.
- **Long-Term Stability**: An independent Election Commissioner safeguards the integrity of elections over time. T.N. Seshan's tenure (1990–1996) demonstrated how fearless leadership can introduce reforms and curb electoral malpractices.
- **Rule of Law**: An independent Election Commissioner ensures that elections follow legal frameworks rather than being influenced by political interests. This upholds democratic principles and prevents arbitrary decision-making.
- **Checks and Balances**: In a democracy, an independent Election Commissioner serves as a counterbalance to the executive and legislative branches.





- This prevents electoral manipulation and safeguards free and fair elections.

Constitutional Provisions

- **Article 324:** The Election Commission of India (ECI) is responsible for **managing the preparation of electoral rolls and conducting elections to Parliament, State Legislatures, and the offices of the President and Vice-President.**
- It also, states that the Election Commission will comprise the Chief Election Commissioner (CEC) and such number of Election Commissioners (ECs), as **the President may decide.**
- The Constitution specifies that the **President will appoint the CEC and ECs**, subject to the provisions of an Act of Parliament.

Benefits of the new Act

- **Legal Immunity for CEC & EC:** The amendment grants **protection from civil and criminal proceedings** related to their official duties.
  - This ensures that the **Chief Election Commissioner (CEC) and Election Commissioners (ECs)** can function **without fear of legal action**.
  - It strengthens their **independence and ability to conduct free and fair elections**.
- **Addressing the Legislative Gap:** The amendment **fills the legislative vacuum** concerning the appointment of CEC and ECs.
  - Previously, there was **no clear law governing their selection**, leading to ambiguity. Now, a structured process **ensures transparency and accountability in appointments**.
- **CEC's Removal Process on Par with SC Judges:** The **CEC can only be removed in the same manner as a Supreme Court judge**.
  - This process requires **parliamentary approval and safeguards against arbitrary removal**. It ensures the **independence of the Election Commission from political influence**.

Criticism

- **Limiting Eligibility to Civil Servants**: Restricting eligibility to individuals who have held a position equivalent to Secretary to the government may exclude other capable candidates.
  - This could reduce diversity in expertise and perspectives within the Election Commission of India (ECI).
- **Concerns About Lack of Parity**: The Act upholds the constitutional provision allowing the Chief Election Commissioner (CEC) to be removed like a Supreme Court Judge, while Election Commissioners (ECs) can only be removed upon the CEC's recommendation. This disparity in removal procedures may raise concerns about fairness.
- **Removal of EC:** The CEC has the immunity of an SC judge and can only be removed by impeachment, the other two can be removed on the orders of the CEC.
- **Deviation from Supreme Court's Recommendation**: In the **Anoop Baranwal Case (2023)**, the Supreme Court, under **Article 142**, ruled that the **Chief Election Commissioner (CEC) and Election Commissioners (ECs)** should be appointed by a committee consisting of the **Prime Minister, Chief Justice of India, and the Leader of the Opposition**.
  - However, the Act allows the Selection Committee's recommendations to be valid even with a vacancy, which may lead to a dominance of ruling party members, potentially compromising the **diversity and independence** of the Election Commission.

Selection Process of the Election Commission in certain countries

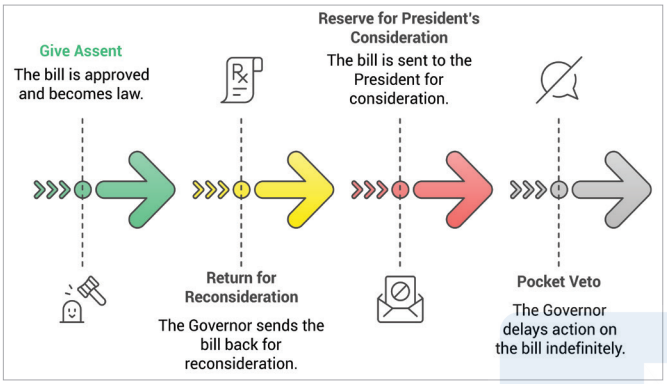
Country	Appointing Authority	Selection Committee/Process
South Africa	President	• President of the Constitutional Court (Chairperson), representative of the Human Rights Court, representative of the Commission on Gender Equality, and the public prosecutor.
United Kingdom	The monarch, upon approval by the House	• The Speaker's Committee on the Electoral Commission with MPs as members, oversees the recruitment of electoral commissioners. • The candidates for these posts are then approved by the House of Commons and appointed by the British monarch. • The Speaker asks the Leader of the House to table a motion for an address to appoint the recommended candidates.
United States	President	The Commission is appointed by the President and confirmed by the Senate.
Canada	–	Appointed by a resolution of the House of Commons.

ROLE OF GOVERNOR IN GIVING ASSENT TO BILLS

The Tamil Nadu government has challenged Governor R.N. Ravi in the Supreme Court for delaying approvals on crucial bills, appointments, and administrative decisions.

Governor's Role in Assenting to Bills (Article 200)

- **Presentation to Governor**: Once a State Legislature passes a bill, it is sent to the Governor for assent. The Governor has four options:



- **Returning a Bill**: If the bill is **not a Money Bill**, the Governor can **return it to the Legislature** with a message suggesting reconsideration or amendments. The Legislature **must reconsider the bill** and, if passed again with or without changes, **the Governor must give assent**.
- **Reservation for President**: The Governor **must reserve a bill for the President's consideration** if it **affects the powers of the High Court** in a way that **could weaken its constitutional role**.

Article 201: Bills Reserved for Presidential Consideration

- **Governor's Role**: When a **State Legislature passes a bill**, the **Governor may reserve it for the President's consideration** instead of giving direct assent.
- **President's Decision:** The President can either approve the bill or withhold assent.
- **Non-Money Bills**: If the bill is **not a Money Bill**, the **President may instruct the Governor to return it to the State Legislature** for reconsideration.
- **Legislative Reconsideration**: The **State Legislature must review and reconsider the bill within six months** after receiving the President's message.
- **Final Submission**: If the bill is passed again, with or without amendments, it must be resent to the President for a final decision.

Issues with Governor's Role

- **Political Interference** – Governors, being appointed by the **Central Government**, are often accused of acting against the **interests of elected state governments**.
- **Lack of Accountability** – The Constitution does not impose a **deadline** for Governors to act on bills, leading to **administrative paralysis**.
- **Discretionary Powers** – In some cases, Governors use their **discretionary powers** to delay or block state legislation, affecting **federalism**.

Key Articles Related to the Governor in India

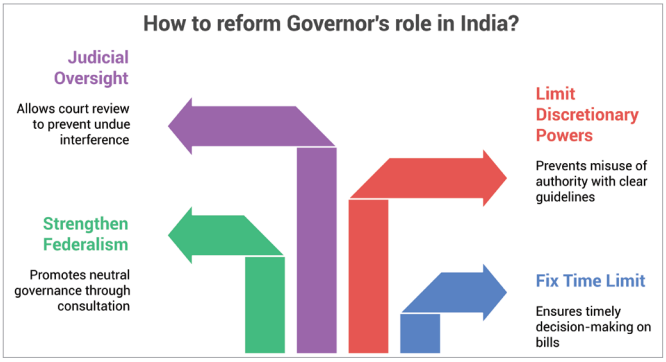
- **Article 153:** Each state shall have a Governor, but one person can be appointed for multiple states.
- **Article 154:** The Governor holds the **executive power** of the state and exercises it directly or through subordinates.
- **Article 155:** The **President appoints** the Governor by warrant under his hand and seal.
- **Article 156:** The Governor holds office at the **pleasure of the President**. He can **resign** by addressing the President. He has a **five-year term**, but can be removed earlier.

Recommendations of Commissions

- **Sarkaria Commission (1988)** – The Governor should **reserve a bill for the President's consideration only in rare cases** and must generally follow ministerial advice.
- **Punchhi Commission (2010)** – The Governor should **decide on a bill within six months**. The Chief Minister should be **consulted before appointing Governors**.

Judicial Interventions

- **Shamsher Singh Case (1974)** – The Supreme Court ruled that the **Governor must act on the advice of the Council of Ministers** in most cases.
- **Rameshwar Prasad Case (2006)** – The court held that a **Governor's refusal to give assent can be challenged in court** and overturned if found unconstitutional.
- **Nabam Rebia Case (2016)** – Affirmed that the **Governor's discretionary powers are subject to judicial review**, preventing arbitrary decision-making.
- **Recent Supreme Court Observation (2024)** – The Governor's role is primarily **ceremonial**, and he should not obstruct the governance of an elected state government.



SC JUDGEMENT IN RANVEER ALLAHBADIA CASE

The Supreme Court directed Solicitor General Tushar Mehta to propose regulatory measures to curb the use of vulgar and obscene language misrepresented as humor in online programs.

Background of the Case:

- The Supreme Court heard YouTuber Ranveer Allahbadia's plea which granted him **interim protection from arrest** in Maharashtra and Assam. The cases relate to his comments on **parents and sex** in the show *India Got Latent*.

Key Highlights of the Judgement:

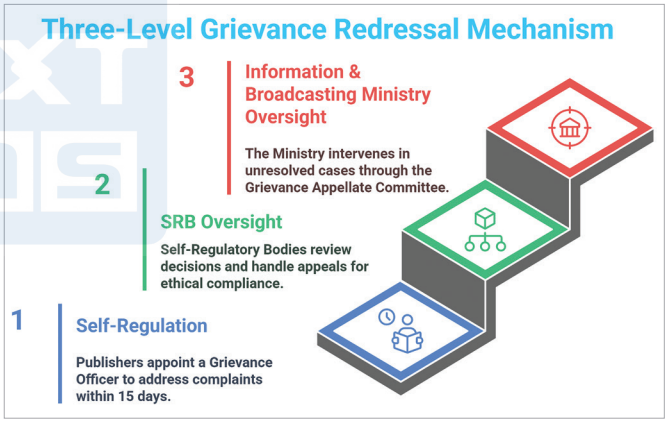
- **Regulatory Measures for Online Content:** The Supreme Court directed the Centre to propose regulatory measures to curb the use of vulgar language in online programs.
  - These measures should ensure adherence to Indian moral standards without infringing on free speech.
- **Distinction Between Humour and Vulgarity:** The Bench emphasized the **difference between humour and perversity**.
  - True humour should be family-friendly and not rely on obscenity. The court recognized the existence of excellent comedians and writers who create humour **without resorting to vulgarity**.
- **Fundamental Rights and Duties:** The court reiterated that **fundamental rights come with duties**. It stated that **moral standards may vary globally**, but content in India must align with **Indian societal norms**.
- **Judicial Observations on Commercial Use of Vulgarity:** The court criticized the use of **vulgar expressions for commercial success**. Justice Kant remarked that freedom of speech is **not absolute and must be exercised responsibly**.

Other Supreme Court's Observations

- **Aveek Sarkar v. State of West Bengal (2014):** The Court adopted the **Community Standards Test**, ruling that obscenity must be assessed based on contemporary social norms.
- It quashed legal proceedings against magazines for publishing a nude image of Boris Becker, stating that the image did not promote depravity or corrupt public morality.

Major Highlights of recent I&B Ministry Advisory on 'Obscene Content

- The Information & Broadcasting Ministry has directed OTT platforms to follow the **Code of Ethics under the IT Rules, 2021,** including strict adherence to age-based classification.
- The **advisory** referenced the Indecent Representation of Women Act, 1986, Bharatiya Nyay Sanhita (BNS), 2023, POCSO Act, and the IT Act, 2000, noting that publishing obscene or pornographic content is punishable under these laws.
- Under the IT Rules, 2021, a **three-level grievance redressal mechanism** governs OTT platforms and digital news publishers:



Fundamental Freedoms Under Article 19

Article	Freedom	Description	Reasonable Restrictions
19(1)(a)	Freedom of Speech & Expression	Right to express opinions through words, writing, pictures, or any other medium.	Security of the State, Public Order, Decency or Morality, Contempt of Court, Defamation, and Incitement to Offense
19(1)(b)	Freedom to Assemble	Right to peacefully assemble without arms.	Public order, sovereignty & integrity of India.
19(1)(c)	Freedom to Form Associations or Unions	Right to form groups, trade unions, or political parties.	Public order, morality, sovereignty & integrity of India.
19(1)(d)	Freedom to Move Freely	Right to travel anywhere within India.	Security, public interest, protection of Scheduled Tribes.
19(1)(e)	Freedom to Reside & Settle	Right to live in any part of India.	Public interest, protection of Scheduled Tribes.
19(1)(g)	Freedom to Practice Any Profession or Trade	Right to choose any lawful occupation or business.	Public interest, professional regulations, monopolies, technical qualifications.

Reasons behind rise of Obscenity on Social Media:

- **Lack of Strict Regulation & Enforcement** – While laws exist, enforcement is often inconsistent, allowing explicit content to spread before action is taken.
  - Many platforms also operate in legal grey areas, making regulation challenging.
- **Widespread Internet Access** – The rapid expansion of affordable smartphones and cheap data in India has given millions unrestricted access to social media, increasing exposure to and creation of obscene content.
- **Monetization & Engagement Algorithms** – Social media platforms prioritize content that generates higher engagement.
  - Sensational and explicit content often attracts more views, leading to creators pushing boundaries for reach and financial gain.
- **Anonymity & Lack of Accountability** – Many users create anonymous accounts, making it easier to share obscene material without fear of repercussions. This anonymity emboldens individuals to indulge in inappropriate behavior online.
- **Influence of Global Content Trends** – International trends in entertainment and social media, where explicit content often garners popularity, influence Indian digital culture, leading to a rise in obscenity among content creators.
- **Weak Parental & Societal Supervision** – Many young users, access social media without guidance or restrictions, leading to increased consumption and sharing of inappropriate content.

Laws Governing Obscenity in Online Content

Law/Section	Key Provisions
Section 294 of the Bhartiya Nyaya Sanhita (BNS), 2023	➲ Penalizes the sale, import, export, advertisement, or profit from obscene material, including electronic content. ➲ The material must be lascivious or excessively sexual.
Section 67 of the Information Technology (IT) Act, 2000	➲ Punishes the publication or transmission of obscene material in electronic form. ➲ First-time offenders face up to 3 years imprisonment and a fine of up to Rs. 5 lakh.
Indecent Representation of Women Act, 1986	➲ Prohibits content that portrays women in an indecent or derogatory manner. It applies to advertisements, publications, paintings, films, and electronic content. Violation can lead to fines and imprisonment.
IT Rules, 2021	➲ Includes a **Code of Ethics** for OTT platforms, mandates **age-based classification and access controls** for "A" rated content to restrict child access, and requires platforms to prevent the transmission of illegal content. ➲ It also establishes a grievance redressal mechanism for handling complaints.
POCSO Act, 2012	(Protection of Children from Sexual Offences Act) Safeguards children from sexual abuse, exploitation, and exposure to explicit content. It criminalizes the creation, transmission, and possession of child sexual abuse material (CSAM), ensuring strict penalties for offenders.

WAY FORWARD

- **Stricter Law Enforcement** – Strengthen laws under **Section 67 of the IT Act** and IPC provisions to curb the creation, distribution, and consumption of obscene content, ensuring swift action against violators.
- **Industry Collaboration and Self-Regulation** – Encourage **OTT platforms, social media companies, and ISPs** to adopt self-regulation guidelines, ensure age-gated content, and proactively remove obscene material to maintain ethical digital spaces.
- **Robust Content Filtering Mechanisms** – Implement advanced **AI-based content moderation tools** across social media and streaming platforms to detect and block obscene material before it reaches users, especially minors.
- **Public Awareness and Digital Literacy** – Conduct nationwide campaigns on **responsible internet usage**, educating parents, teachers, and young users about the risks of obscene content and safe browsing practices.
- **Stronger Parental Controls** – Promote the use of **content restriction tools** and **child-friendly browsing modes** on smartphones, computers, and streaming services to limit children's exposure to inappropriate material.

STATUS OF DEVOLUTION TO PANCHAYATS IN STATE REPORT, 2024

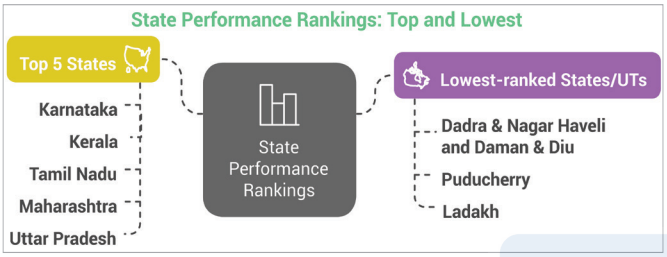
The Union Ministry of Panchayati Raj has released the report titled 'Status of Devolution to Panchayats in States – An Indicative Evidence-Based Ranking' (2024).

Meaning of Panchayats

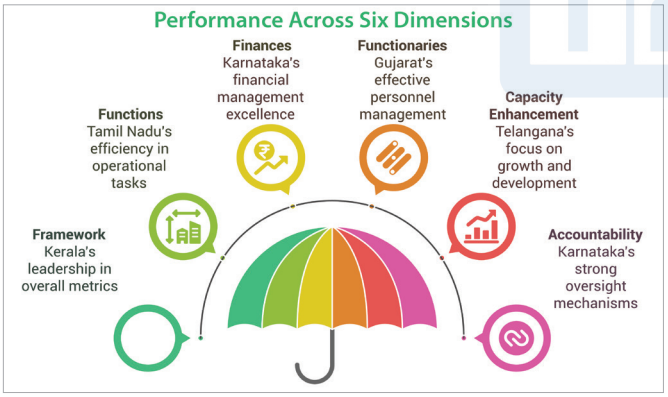
- Panchayats are local self-govt. bodies in rural India established to promote decentralized governance and development.

Major Findings

- **Overall Devolution:** The devolution to rural local bodies increased from 39.9% in 2013-14 to 43.9% in 2021-22.



- **Infrastructure Improvements:** Government initiatives have strengthened Panchayati Raj Institutions (PRIs) through infrastructure development, staffing, and digitalization, increasing the functionaries index from 39.6% to 50.9%.
- **Capacity Enhancement:** The **Rashtriya Gram Swaraj Abhiyan (RGSA)** (2018) contributed to capacity building, raising the index from 44% to 54.6%.



Constitutional Provisions Related to Panchayat

- The **73rd CAA of 1992** added a new **Part IX** to the Constitution of India, entitled 'The Panchayats' and it also added a new **11th Schedule** to the Indian Constitution.
- Part IX of the Constitution consists of **Articles 243 to 243-0,** which provides for various provisions regarding PRIs. The 11th Schedule contains a comprehensive list of **29 subjects** that have been devolved to Panchayats.
- The 73rd CAA also provides for a three-tier system of Panchayati Raj in every State, consisting of the following:
  - Panchayats at the village level, Panchayats at the intermediate level, and Panchayats at the district levels.

Challenges Identified in Report

- **Incomplete Devolution of Powers:** Many states have not fully transferred governance functions to Panchayats, retaining control over key sectors such as health, education, and sanitation. Without a clear legal mandate, PRIs struggle to function as self-governing institutions.
- **Gender Disempowerment and Proxy Leadership:** The **"Panchayat Pati" phenomenon** (where male relatives, usually husbands, make decisions on behalf of elected women representatives) remains widespread, weakening women's political empowerment.It is observed in states like Rajasthan and Madhya Pradesh.
- **Ambiguous Functional Responsibilities:** The distribution of responsibilities across Gram, Block, and Zila Panchayats is often unclear, leading to duplication of work and inefficiencies.
  - Overlapping roles between Panchayats and state departments further weaken their authority.
  - Programs like MGNREGA and NHM are frequently implemented through separate administrative structures instead of being integrated with PRIs.
- **Limited Financial Autonomy:** Panchayats rely heavily on state and central government grants, with limited power to generate their own revenue.
  - Although they can be authorized to levy taxes, many states have not implemented effective financial devolution, restricting their fiscal independence.
- **Inadequate Human Resource Deployment:** Panchayats suffer from a shortage of skilled personnel, including Panchayat Secretaries, engineers, and IT professionals.
  - The lack of trained administrative staff affects service delivery, financial management, and the implementation of development programs.
- **Infrastructure and Digital Divide:** Many Gram Panchayats lack proper office buildings, digital facilities, and reliable internet connectivity. Despite initiatives like **e-Gram Swaraj**, poor infrastructure limits the adoption of digital governance and transparency measures.
- **Weak Accountability Mechanisms:** Transparency and grievance redressal systems, such as social audits and public disclosures, are often poorly implemented.
  - While some states have robust accountability frameworks, many struggle with irregular audits and lack of citizen participation in governance.
- **Ineffective Capacity Building of Functionaries:** Training programs for Panchayat members remain inadequate, leaving many elected representatives without the necessary skills to manage governance responsibilities.

- Capacity-building efforts under initiatives like Rashtriya Gram Swaraj Abhiyan (RGSA) have not reached all targeted officials.

- **Challenges in Fund Utilization:** Delays in fund disbursement and lack of financial expertise lead to underutilization of grants allocated to Panchayats. Many local bodies face difficulties in preparing budgets and executing development projects efficiently.
- **Excessive Bureaucratic and Political Interference:** Panchayats often require approval from district and state authorities for fund allocations and project implementation.
  - This excessive control limits their decision-making power and delays developmental initiatives at the local level.

Recommendations for Strengthening Panchayati Raj Institutions

- **Ensure Full Devolution of Powers:** States should transfer all 29 subjects listed in the 11th Schedule of the Constitution to Panchayats. Zila Parishads should be made responsible for district-level planning, ensuring functional and financial autonomy for PRIs.
- **Address Gender Disempowerment and Proxy Leadership:** To combat the **Panchayat Pati** and **Sarpanch Pati Syndrome**, leadership training for elected women representatives should be prioritized. Longer tenure for reserved seats can help women leaders gain experience and assert their authority.
- **Enhance Training and Capacity Building:** Under the Rashtriya Gram Swaraj Abhiyan (RGSA), a comprehensive and regular training program should be developed for elected representatives and officials, focusing on governance, financial management, and digital literacy.
- **Improve Digital and Physical Infrastructure:** All Panchayats should be equipped with office buildings, computers, and internet connectivity. Universal adoption of e-Gram Swaraj and e-FMS (electronic fund management system) will enhance transparency and efficiency.
- **Ensure Timely Elections and Reduce Political Interference:** The State Election Commission should have full control over scheduling Panchayat elections without state government intervention. A common electoral roll should be developed to avoid duplication and inconsistencies.
- **Institutionalize Regular Performance Assessments:** A nationwide **Panchayat Performance Index** should be created to monitor the effectiveness of decentralization. States should conduct periodic surveys to track the progress of financial and administrative devolution.

Revenue Composition of Panchayati Raj Institutions (PRIs)

- **Limited Self-Financing Capacity:** PRIs generate only **1% of their revenue through local taxes**, highlighting their heavy dependence on external funding sources.
- **Reliance on Grants:** Nearly **80% of PRI revenue** comes from Central government grants, while **15%** is contributed by State government grants.
- **Revenue Per Panchayat:** On average, a Panchayat generates **₹21,000 from its own taxes** and **₹73,000 from non-tax sources** annually.
- **External Funding Support:** Central government grants to Panchayats average **₹17 lakh**, while State government grants stand at approximately **₹3.25 lakh**, reinforcing their financial dependence.
- **Low Revenue Expenditure:** The **ratio of Panchayat revenue expenditure to nominal GSDP** remains below **0.6% in all states**, ranging from **a mere 0.001% in Bihar to 0.56% in Odisha**.
- **Inter-State Disparities:** Kerala and West Bengal report the **highest average revenue** (over **₹60 lakh and ₹57 lakh**, respectively), whereas Andhra Pradesh and Punjab have much lower revenues, **below ₹6 lakh**.

Sushil Kumar Committee Recommendations (The Ministry of Panchayati Raj had created this committee in 2023 to examine the issue of women pradhans being represented by male members of their families)

- Enforce strict penalties for proven cases of proxy leadership to deter interference by male relatives as a measure to curb the practice of 'Pradhan Pati', 'Sarpanch Pati' or 'Mukhiya Pati' in Gram Panchayats across the country.
- Implement quotas for women in **panchayat subject committees** and **ward-level committees** (as done in Kerala).
- Appoint women ombudspersons for grievance redressal.
- Develop **virtual reality simulation training** for women representatives.
- Integrate **AI-powered query-driven guidance** in vernacular languages for real-time legal and governance support.
- Utilize the **Panchayat Nirnay Portal** to track elected pradhans' participation in decision-making.
- Set up **helplines and women watchdog committees** to confidentially report proxy leadership.
- Introduce **whistleblower rewards** for verified cases of proxy leadership exposure.
- Conduct **continuous and mandatory training** in vernacular languages.
- Collaborate with **IIMs, IITs/NITs** for leadership and governance training.

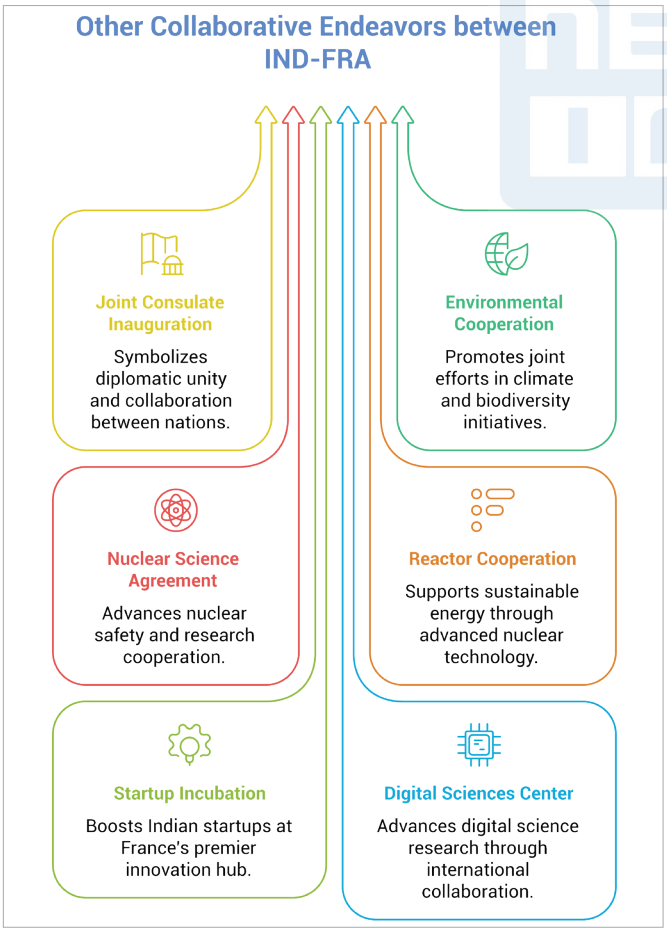
INDIA-FRANCE RELATIONS

PM Modi and the French President met on the sidelines of Paris AI Summit, reaffirming their strong commitment to the India-France Strategic Partnership.

Key Outcomes of Recent Meet:

- **India-France Declaration on Artificial Intelligence (AI):** Strengthens collaboration in **technology, innovation, and scientific research**, promoting advancements in **artificial intelligence and digital transformation**.
- **Launch of the Logo for India-France Year of Innovation 2026:** Symbolizes the commitment to **joint innovation efforts**, fostering cooperation in **science and technology (S&T) and emerging technologies**.
- **Renewal of MoU on Nuclear Cooperation with GCNEP:** Extends nuclear collaboration between **India's Department of Atomic Energy (DAE) and France's Commissariat à l'Énergie Atomique et aux Énergies Alternatives (CEA)** under the **Global Center for Nuclear Energy Partnership (GCNEP)**.
- **Joint Declaration on Triangular Development Cooperation:** Supports **Indo-Pacific regional development and sustainable projects**, enhancing **global partnerships for sustainable development goals (SDGs)**.

Other Collaborative Endeavors between IND-FRA



Significance of India-France Relations

- **Historical Support & Strategic Partnership:** France was the **first country to initiate a Strategic Dialogue with India** after the **1998 nuclear tests**, refusing to impose bilateral sanctions.
  - In 2023, both nations **celebrated 25 years of their Strategic Partnership**, structured under **Security, Sovereignty, Planet, and People**.
  - **Long-Term Strategic Roadmap:** The **Horizon 2047 Framework** sets a **visionary roadmap** for **India-France relations** up to **2047**, ensuring sustained collaboration across key sectors like **defence, nuclear energy, and space exploration**, along with **environmental initiatives** like **eliminating single-use plastics.**
- **Geopolitical Cooperation:** France **supports India's bid for permanent UNSC membership** and advocates for UN reforms. It backed India's accession to **MTCR, Wassenaar Arrangement, and Australia Group**, while also assisting India's bid for **NSG membership**.
  - Both nations push for the adoption of the **Comprehensive Convention on International Terrorism (CCIT)** at the UN.
- **Economic and Trade Relations:** Bilateral trade reached **$13.4 billion in 2022-23**, with France among **India's largest investors**, contributing **$659.77 million in FDI**.
  - Over **1,000 French companies operate in India**, while **150 Indian businesses have a presence in France**.
  - Cooperation extends to **nuclear energy**, including **Jaitapur Nuclear Power Project (JNPP), Small Modular Reactors (SMR), and Advanced Modular Reactors (AMR)**.
- **Diaspora and Cultural Engagement:** France hosts **119,000 Indians**, largely from **former French colonies and Indian states**.
  - The partnership is **strengthened by shared democratic values, cultural exchanges, and academic collaborations**, with a goal to **increase Indian students in France from 10,000 to 30,000 by 2030**.
- **Space and Scientific Collaboration:** ISRO and CNES have a **long-standing space partnership**, with France supplying critical components for India's **satellite and space exploration programs**. Both nations work together on **climate monitoring, Earth observation, and space research**.
- **Indo-Pacific Strategy & Multilateral Engagement:** France supports **India's role in the Indian Ocean Commission** and actively participates in the **India-France-Australia Trilateral Dialogue**, promoting a **free, open, and inclusive Indo-Pacific** while countering China's growing influence.
- **Defence and Security Collaboration:** Defence ties are **reviewed annually** under the **Annual Defence Dialogue and High Committee on Defence Cooperation**.

- Key projects include the **P-75(I) Scorpene submarine deal (2005), Rafale fighter jet procurement**, and India's plan to acquire **naval Rafale variants**.
- Joint military exercises include **Garuda (Air), Shakti (Army), and Varuna (Navy)**.
- **Akasa Air Deal:** Both the nations signed a $5 billion agreement for over 300 LEAP-1B engines for its fleet of 170 Boeing MAX aircraft.

Project-75 (I): Kalvari-Class Submarines

- **Objective**: Indigenous construction of six advanced diesel-electric attack submarines to strengthen the Indian Navy's underwater capabilities and reduce dependence on foreign defense imports.
- **Key Features**: These submarines are equipped with state-of-the-art torpedoes, anti-ship missiles, advanced sonar and sensor suites, electronic warfare systems, and stealth technology to enhance operational effectiveness in modern naval warfare.
- **Technological Upgrade**: Features a fuel-cell-based **Air Independent Propulsion (AIP)** system, allowing submarines to stay submerged longer without surfacing for oxygen, significantly enhancing stealth, endurance, and operational range in enemy waters.
- **Manufacturers:** Built by **Mazagon Dock Shipbuilders Limited (MDL)** in collaboration with **Naval Group (France)** under a transfer of technology agreement.
- **Submarines Under Project-75**: The six submarines commissioned or under construction include **INS Kalvari, INS Khanderi, INS Karanj, INS Vela, INS Vagir, and INS Vagsheer**.

Challenges in India-France Relations

- **Lack of a Free Trade Agreement (FTA):** The absence of a **bilateral FTA** and stalled negotiations on the **India-EU Broad-based Trade and Investment Agreement (BTIA)** have limited economic growth and investment opportunities.
- **Defence Procurement and Technology Transfer Issues:** Disagreements over cost, technology sharing, and co-development timelines have delayed defence projects, impacting **Make in India** initiatives in military production.
- **Differences in Climate & Energy Policies:** While both nations push for **renewable energy and climate action**, differences exist over **nuclear energy cooperation, green technology financing, and international climate commitments**.
- **Geopolitical Differences on Russia and China:** France strongly condemned **Russia's invasion of Ukraine**, while India maintained a **neutral stance**, creating diplomatic friction.
  - Their **approaches to China's Belt and Road Initiative (BRI)** also differ, impacting strategic coordination.
- **Indo-Pacific Strategic Challenges:** While both nations advocate for an **Indo-Pacific free from Chinese dominance**, balancing **national interests and regional partnerships** remains a challenge in **coordinating defence and economic strategies**.
- **Delayed Infrastructure and Defence Projects:** The **Jaitapur Nuclear Power Project** remains stalled due to **cost and regulatory concerns**, delaying India's nuclear expansion.
  - Similar delays in **joint defence manufacturing** have slowed technological collaboration.
- **Barriers in Higher Education & Mobility:** Despite ambitious goals, **visa regulations, language barriers, and limited scholarships** continue to restrict Indian students and professionals from fully leveraging opportunities in France.

WAY FORWARD

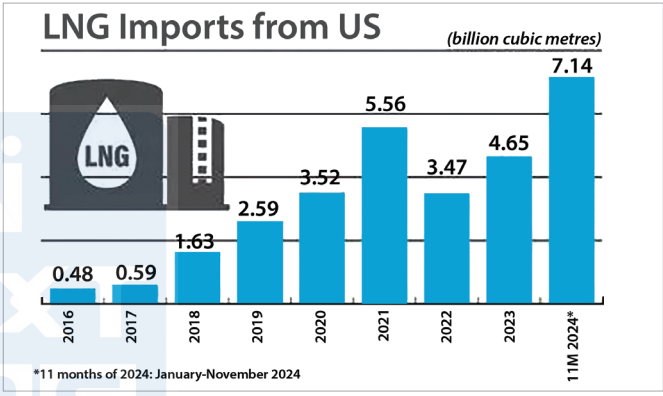
- **Accelerating a Bilateral Trade Agreement:** Strengthening economic ties by reviving stalled FTA negotiations, addressing trade imbalances, and enhancing market access for businesses on both sides.
- **Strengthening Intellectual Property Rights (IPR) Protection:** Collaborative efforts to improve India's IPR framework, ensuring robust protection for French innovations and patents, especially in pharmaceuticals and technology sectors.
- **Aligning Geopolitical Strategies:** Regular strategic dialogues to harmonize positions on key global issues like terrorism, climate change, and UNSC reforms, ensuring coordinated diplomatic efforts.
- **Deepening Defence & Security Cooperation:** Expanding joint research, development, and production of defence technologies, while streamlining procurement processes to avoid project delays.
- **Enhancing Collaboration in Global Governance:** Strengthening joint efforts in reforming international institutions, tackling pandemics, cybersecurity threats, and counterterrorism through multilateral platforms.
- **Boosting Indo-Pacific Strategic Engagement:** Coordinating regional security initiatives, improving naval cooperation, and engaging with ASEAN and QUAD partners to counterbalance Chinese expansion.

INDIA'S RISING LNG IMPORTS

Recently, India's LNG imports from the United States surged to an unprecedented 7.14 billion cubic meters (BCM) during the first 11 months of 2024, reflecting a 71% year-over-year rise.

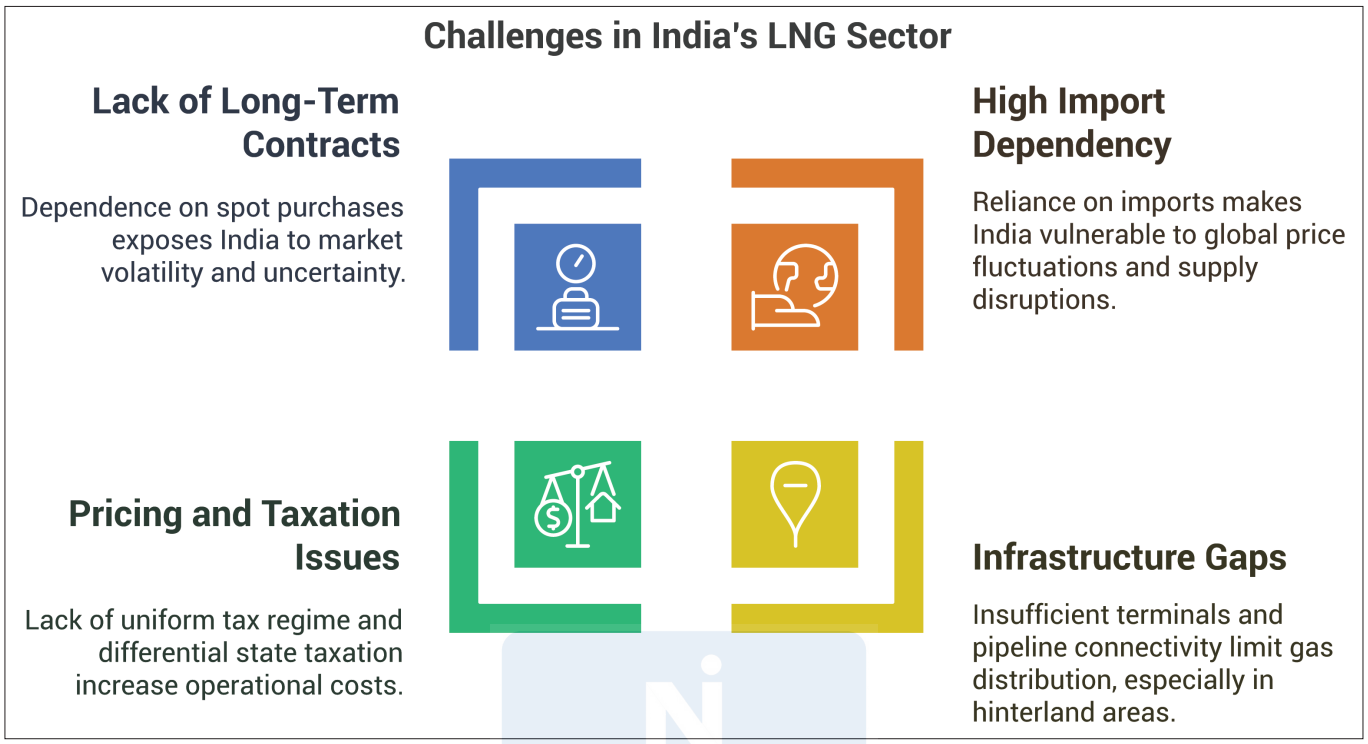
About:

- **Production Process:**
  - Liquefied Natural Gas (LNG) is produced by **cooling natural gas to approximately -162°C (-260°F)**, which transforms the gas into a **liquid state**.
  - This cooling process **reduces the volume of natural gas by about 600 times**, making it more economical to store and transport over long distances.
  - The liquefaction process also **removes impurities** such as water, carbon dioxide, sulfur compounds, and heavy hydrocarbons, resulting in a **highly purified form of methane**.
  - After liquefaction, LNG is typically stored and transported in **specially designed cryogenic tanks** to maintain its liquid state.
- **Composition and Properties:**
  - LNG is primarily composed of **methane (around 90%)**, with small amounts of other hydrocarbons such as **ethane, propane, and butane**.
  - **It is:**
    - **Odourless:** Does not have a distinct smell, unlike natural gas, which is often odorized for safety.
    - **Colourless:** Appears transparent or slightly bluish when in liquid form.
    - **Non-toxic:** Does not pose a health risk if ingested or inhaled.
    - **Non-corrosive:** Does not damage metals or other materials it comes into contact with.
  - Due to its extremely low temperature, **direct contact with LNG can cause severe frostbite or cold burns**.
- **Safety Aspect:** Since LNG is stored at low temperatures, it **does not ignite or explode in its liquid form**.
  - However, when it vaporizes and mixes with air at a concentration of **5% to 15%**, it becomes **flammable**.
- **Applications and Uses:**
  - LNG is primarily used as a **fuel for power generation**, **industrial applications**, and **domestic heating and cooking**.
  - It is increasingly utilized as a **clean fuel for transportation**, especially for **heavy-duty vehicles and marine vessels**, due to its **lower carbon emissions compared to conventional fossil fuels**.
  - As a **transition fuel**, it plays a crucial role in **reducing carbon footprints** while renewable energy technologies mature.
- **Global Position of India:**
  - India is the **fourth-largest importer of LNG globally**, driven by its growing demand for **clean and efficient energy sources**.
  - The country imports LNG primarily from **Qatar, Australia, the United States, and Russia** to meet its **rising energy needs**.
  - As part of its energy transition, India aims to **increase the share of natural gas in its energy mix from 6% to 15% by 2030**, with LNG playing a vital role.
  - The country has established several **LNG import terminals**, such as those at **Dahej, Hazira, Kochi, and Ennore**, and is investing in **new terminals and pipeline infrastructure** to enhance distribution.



Importance of LNG for India

- **Energy Security and Diversification**
  - India is the world's third-largest energy consumer, with its energy demand expected to double by 2040 (IEA).
  - Domestic natural gas production is insufficient to meet demand, covering only about **50%** of the consumption.
  - LNG imports bridge the gap between demand and supply, reducing dependence on conventional crude oil imports.
- **Cleaner and Greener Energy Transition**
  - India has pledged to achieve **net-zero emissions by 2070**.
  - LNG emits **40% less CO_2** compared to coal and **30% less** than oil, making it vital for reducing carbon emissions.
  - It serves as a transitional fuel, complementing renewable energy expansion.
- **Industrial and Manufacturing Needs**
  - Key industries like fertilizers, petrochemicals, and ceramics are major consumers of LNG.
  - For example, the **fertilizer sector alone accounts for nearly 31%** of India's natural gas consumption.
- **Power Generation**
  - Gas-based power plants in India have a combined capacity of around **24 GW**, but many remain underutilized due to domestic gas shortages.



- LNG imports ensure fuel availability, boosting the capacity utilization of these plants.

- **Economic Competitiveness:** LNG prices have become more competitive compared to traditional fuels.
  - The US has emerged as a reliable supplier, offering LNG at relatively low and stable prices, thus diversifying India's import portfolio.
- **Strategic Infrastructure Investments:** India is investing in LNG terminals and pipeline infrastructure to enhance storage and distribution.
  - For instance, the **Dahej LNG Terminal** has a capacity of **17.5 million metric tonnes per annum (MMTPA)**, and expansion projects are underway.
- **Geopolitical Considerations:** Diversifying LNG imports from countries like the US and Qatar reduces geopolitical risks related to energy security. Strengthening ties with multiple LNG-exporting nations safeguards against supply disruptions.

Government Initiatives to Boost LNG

- **National Gas Grid Expansion:**
  - The **National Gas Grid project** aims to expand the LNG pipeline network to improve supply efficiency and accessibility.
  - The objective is to **connect gas sources to major demand centers** across the country, promoting regional balance.
  - The length of the operational Natural **Gas Pipeline in** the country **has increased** from 15,340 **Km in** 2014 to 24,945 **Kms** as **on** 30.09.2024.
  - This expansion will **minimize supply bottlenecks**, reduce transportation costs, and ensure consistent gas availability.
- **Expansion of City Gas Distribution (CGD):**
  - The government is promoting **Piped Natural Gas (PNG)** for households and **Compressed Natural Gas (CNG)** for the transport sector.
  - CGD networks are being rapidly developed to cover more cities and towns under the **10th and 11th CGD bidding rounds**.
  - This initiative aims to ensure clean cooking fuel and reduce vehicular emissions through CNG adoption.
  - Currently, **96% of the population in 28 states and Union Territories** is targeted for CGD coverage.
- **Development of New LNG Terminals:**
  - To meet the rising demand, India is setting up new LNG import and storage terminals.
  - Existing terminals like **Dahej, Hazira, and Kochi** are being expanded, while new terminals are proposed at **Jaigarh, Chhara, and Dhamra**.
  - These terminals will enhance the country's **regasification capacity**, which is expected to increase from **42.5 MTPA to 60 MTPA** by 2030.
- **Liberalization of Gas Pricing:**
  - The government has introduced **marketing and pricing freedom** for gas extracted from challenging fields, such as **high-pressure, deepwater, and coal seam sources**.
  - A **ceiling price mechanism** is implemented to balance affordability and investor interest.
  - This move aims to **attract private and foreign investment** by offering flexible pricing and transparent market mechanisms.

ACHIEVING 100 GW SOLAR POWER CAPACITY

Recently, India achieved a significant milestone in its renewable energy journey by surpassing 100 gigawatts (GW) of installed solar power capacity.

About

- **Rapid Expansion of Solar Capacity**
  - Over the past **decade (2014–2025)**, India's solar energy sector has witnessed an **unprecedented 3,450% increase in capacity**, growing from **2.82 GW in 2014** to **100 GW in 2025**.
  - As of **January 31, 2025**, India's **total installed solar capacity** stands at **100.33 GW**, with an additional **84.10 GW under implementation** and **47.49 GW under tendering**.
  - The country is also making significant progress in **hybrid and round-the-clock (RTC) renewable energy projects**, with **64.67 GW currently being implemented and tendered**.
  - The total combined solar and hybrid projects in the pipeline stand at **296.59 GW**, positioning India as a leader in **renewable energy transition**.
- **Solar Power as the Leading Renewable Energy Source**
  - Solar energy has emerged as the **dominant contributor** to India's renewable energy sector, accounting for **47% of the total installed renewable capacity**.
  - The year **2024 saw record-breaking growth**, with **24.5 GW of new solar installations**, marking **more than a two-fold increase** compared to 2023.
  - **Utility-scale solar projects** contributed **18.5 GW** of new capacity in 2024, which is **2.8 times higher** than the capacity added in 2023.
  - States like **Rajasthan, Gujarat, Tamil Nadu, Maharashtra, and Madhya Pradesh** have played a significant role in driving this growth, leading the country's solar transition.
- **Surge in Rooftop Solar Adoption**
  - India's **rooftop solar sector** has also experienced rapid expansion, with **4.59 GW of new rooftop solar capacity** installed in **2024**, marking a **53% growth** from 2023.
  - The **PM Surya Ghar: Muft Bijli Yojana**, launched in **2024**, has been a **key driver** in promoting rooftop solar adoption, bringing affordable and clean energy solutions to households.
  - The scheme has facilitated **nearly 9 lakh rooftop solar installations**, helping citizens reduce electricity costs and contribute to the country's clean energy goals.
- **Growth in Solar Manufacturing and Domestic Production**
  - India has made **significant strides in solar manufacturing**, increasing its **solar module production capacity** from **just 2 GW in 2014** to **60 GW in 2024**.
  - With this growth, India is emerging as a **global hub for solar panel manufacturing**, reducing its dependence on imports and strengthening its renewable energy supply chain.
  - The government has set a target to **achieve 100 GW of solar module production capacity by 2030**, supported by various policy incentives and investments.

Significance of Solar Energy for India

- **Abundant Solar Potential**
  - India is endowed with approximately 300 sunny days annually, offering a solar potential of around 5,000 trillion kWh per year.
  - The average solar insolation is about 4-7 kWh per square meter per day, making it one of the most suitable countries for harnessing solar power.
- **Energy Security and Independence**
  - India heavily depends on fossil fuel imports (about 85% of crude oil and 50% of natural gas), which exposes the country to global price volatility.
  - Solar energy reduces dependency on imports and enhances energy security.
- **Economic and Job Creation**
  - The solar PV sector in India employed about 318,600 people in both on-grid and off-grid systems.
  - Investments in solar energy contribute to the local economy, especially through manufacturing solar panels and setting up solar parks.
- **Climate Change Mitigation**
  - Solar power significantly reduces carbon emissions, helping India meet its Nationally Determined Contributions (NDCs) under the Paris Agreement.
  - As of 2024, solar energy in India is estimated to be mitigating around 90-100 million tonnes of CO_2 emissions annually.
- **Rural Electrification and Energy Access**
  - Solar-powered microgrids and off-grid systems are crucial for rural electrification, particularly in remote and inaccessible areas.
  - More than 20 lakh solar pumps have been installed for agricultural use, reducing diesel dependency.
- **Achievements and Targets**
  - Till December 2024, India's installed solar capacity reached 76 GW, making it the fourth-largest solar power producer globally.
  - The government aims to achieve 280 GW of solar capacity by 2030 as part of its 500 GW renewable energy goal.
  - The ambitious International Solar Alliance (ISA) aims to mobilize over $1 trillion in investments by 2030.

Key Government Initiatives to Promote Solar Energy

- **National Solar Mission (NSM) (2010)**
  - Launched under the **National Action Plan on Climate Change (NAPCC)**, the **Jawaharlal Nehru National Solar Mission (JNNSM)** aims to position India as a global leader in solar energy.
  - **Target:** Achieve **280 GW** of installed solar power capacity by **2030** as part of India's commitment to reaching **500 GW of non-fossil fuel capacity** by 2030.
  - The mission has driven policies such as **Renewable Purchase Obligations (RPOs), Viability Gap Funding (VGF), and Solar Renewable Energy Certificates (RECs)** to encourage private investment.
- **PM SuryaGhar Muft Bijli Yojana (2024)**
  - Announced in **2024**, this scheme aims to promote **rooftop solar installations** across **one crore households**, enabling them to generate electricity and reduce power bills.
  - **Government Subsidy:** Households can receive **up to ₹75,000 in subsidies** to install rooftop solar panels.
  - **Budget Allocation:** ₹75,000 crore has been allocated to fund this initiative.
  - The scheme is expected to generate **solar power for free electricity (up to 300 units per month)** and reduce household dependence on traditional power sources.
- **PM-KUSUM Scheme (2019)**
  - The **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)** supports farmers in adopting solar power solutions.
  - **Objectives:**
    - **Component-A:** Installation of **10 GW** of decentralized **ground-mounted solar plants**.
    - **Component-B:** Solarization of **20 lakh agricultural pumps**, reducing reliance on diesel.
    - **Component-C:** Solarization of **15 lakh grid-connected pumps**, enabling farmers to sell surplus power to distribution companies (DISCOMs).
  - **Financial Support:** Offers a **subsidy of up to 60%** on solar pump installation, shared by the central and state governments.
- **Solar Parks Scheme (2014)**
  - This initiative supports the establishment of **ultra-mega solar power projects**, aiming for a cumulative capacity of **40 GW** by **2025-26**.
  - **Major Solar Parks:**
    - **Bhadla Solar Park (Rajasthan)** – **2,245 MW** (World's largest solar park).
    - **Pavagada Solar Park (Karnataka)** – **2,050 MW**.
    - **Rewa Ultra Mega Solar Park (Madhya Pradesh)** – **750 MW** (First project supplying solar power to Indian Railways).
  - The parks attract domestic and foreign investment, ensuring large-scale clean energy production.
- **Production-Linked Incentive (PLI) Scheme for Solar PV Modules (2021)**
  - Aims to promote **domestic manufacturing** of high-efficiency **Solar Photovoltaic (PV) modules** to reduce import dependence (especially on China).
  - **Target:** Develop **65 GW of module manufacturing capacity** across India by **2026-27**.
- **International Solar Alliance (ISA) (2015)**
  - A **global initiative co-launched by India and France** at COP21 (Paris Climate Summit) to promote solar energy cooperation among **solar-rich countries**.
  - **Members:** Over **120 countries**, focusing on **solar finance, technology sharing, and capacity building**.
  - **Key Projects:**
    - **One Sun, One World, One Grid (OSOWOG)** – An ambitious plan to create a transnational solar grid.
    - **Solar Risk Mitigation Initiative (SRMI)** – Encouraging investments in solar projects in developing nations.

WAY FORWARD

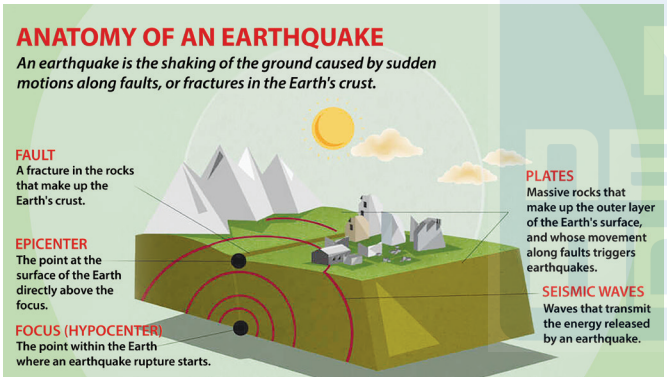
- **Simplify Land Acquisition & Approvals:** Streamline regulatory processes by implementing a **single-window clearance** system for faster approvals.
- **Secure Long-term PPAs & Rationalize Tariffs:** Establish stable **long-term Power Purchase Agreements (PPAs)** to provide revenue security for solar developers.
- **Battery Storage & Smart Grids:** Deploy **battery energy storage systems (BESS)** and **smart grids** to store excess solar power, improve grid stability, and enable uninterrupted energy supply, especially during low sunlight hours or peak demand periods.
- **Advanced Solar Technologies:** Encourage the adoption of **bifacial solar panels**, **AI-driven performance monitoring**, and **agrivoltaic systems** to enhance energy efficiency, optimize land use, and increase overall solar power generation.
- **Rooftop Solar & Agri-solar:** Provide **financial incentives, subsidies, and easy financing options** to promote rooftop solar adoption in urban areas and **solar irrigation pumps** for farmers, reducing dependency on conventional energy sources.

DELHI'S SHALLOW EARTHQUAKE

Recently, a 4.0 magnitude earthquake hit Delhi in February 2025, attributed to hydro fracturing beneath the Aravalli-Delhi Fold Belt.

About

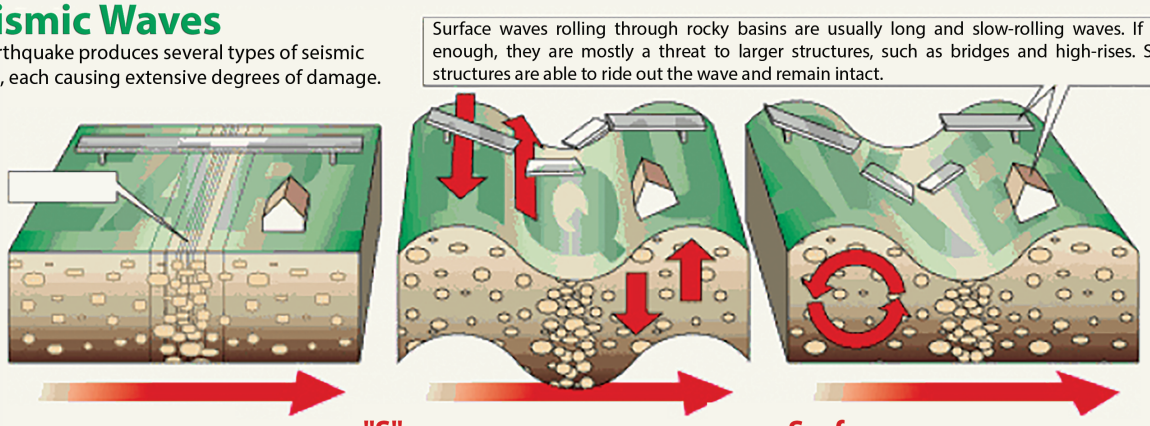
- **Definition**
  - An **earthquake** occurs due to the **sudden movement of tectonic plates** beneath the Earth's surface.
  - It happens when **two blocks of the Earth's crust slip past each other along a fault line**, releasing **elastic strain energy** in the form of **seismic waves**.
  - These **waves cause ground shaking**, leading to varying degrees of damage.
- **Key Terms:**
  - **Epicenter:** The **point on the Earth's surface** directly above where the earthquake originates.
  - **Hypocenter (Focus):** The **actual location** beneath the Earth's surface where the earthquake begins.



- **Measuring Earthquakes**
  - Earthquakes are measured in terms of **magnitude (energy released)** and **intensity (impact felt on the surface).**
  - **Magnitude:** Measured on the **Richter Scale** (logarithmic scale).
    - Each whole-number increase represents **10 times greater** ground motion and **32 times more energy release**.
  - **Intensity:** Measured using the **Mercalli Scale** (subjective scale).
    - Assesses **earthquake effects** based on observations and damage.
- **Earthquake Risk in India**
  - **India is among the most seismically active regions** due to its position along the **Indian Plate, which is colliding with the Eurasian Plate**.
  - Several devastating earthquakes have occurred in **Himalayan regions**, **North India**, and **other vulnerable areas**.
  - The increasing **tectonic stress along fault lines**, particularly in **northern India**, is contributing to frequent tremors.
- **Seismic Zonation in India**
  - The **Bureau of Indian Standards (BIS)** has classified India into **four seismic zones** based on earthquake vulnerability.
  - **11% of India lies in Zone V**, **18% in Zone IV**, **30% in Zone III**, and the **rest in Zone II**.

Seismic Waves

An earthquake produces several types of seismic waves, each causing extensive degrees of damage.



"P" waves

The initial jolt comes from the primary or "P" wave. It travels in a fast, longitudinal fashion, alternately compressing and dilating the rock. They are generally felt as a bang or thump.

"S" waves

The slower and stronger secondary, or shear, wave arrives after the "P" wave, shaking the ground in a crosswise and vertical motion. "S" waves cannot travel through the outer core because these waves cannot exist in air, water, or molten rock.

Surface waves

Trapped near the Earth's surface, the earthquake's energy travels horizontally. The Rayleigh wave, shown above, has similar uniform properties of an aquatic wave and can cause severe damage to larger structures. Surface waves rolling through rocky basins are usually long and slow-rolling waves. If strong enough, they are mostly a threat to larger structures, such as bridges and high-rises. Smaller structures are able to ride out the wave and remain intact.

Seismic Zone	Risk Level	Key Regions
Zone V *(Highest Risk)*	**Very High**	**Northeast India, Himachal Pradesh, Uttarakhand, Parts of Bihar and Gujarat** (MSK-9 intensity or higher)
Zone IV	**High**	**Delhi, Jammu & Kashmir, Parts of Maharashtra** (MSK-8 intensity)
Zone III	**Moderate**	Southern and Central States
Zone II	**Low**	Parts of **Southern India** (Least seismic activity)

58.6% of India's landmass is earthquake-prone, with Zone V and Zone IV being the most vulnerable.

Seismic Origin of the Delhi Earthquake

- **Epicenter and Depth of the Delhi Earthquake**
  - The **epicenter** of the earthquake was **within Delhi**, unlike Himalayan earthquakes that originate from tectonic plate movement.
  - It occurred at a **shallow depth of 5 km**, leading to **strong seismic waves near the surface**, causing **more intense tremors**.
  - **Types of Earthquakes Based on Depth:**
    - **Shallow:** 0–70 km deep (more destructive due to proximity to the surface).
    - **Intermediate:** 70–300 km deep.
    - **Deep:** 300–700 km deep.
- **Causes**
  - The earthquake was triggered by **normal faulting**, involving **vertical rock movement**.
  - **Hydro Fracturing** was identified as a key cause:
    - **Underground water movement erodes rock formations**, creating fractures.
    - These fractures **accumulate stress and release seismic waves**, leading to earthquakes.

Difference from Himalayan Earthquakes		
Feature	**Delhi Earthquake**	**Himalayan Earthquake**
Cause	Local geological stress	Tectonic plate movement (Indian plate subducting under the Eurasian plate)
Fault Type	Hydro fracturing, normal faulting	Large-scale thrust faults
Magnitude	Generally mild (up to 6)	Can be large (7–8+ magnitude)

- **Geological Context: The Aravalli-Delhi Fold Belt**
  - Delhi is part of the **Aravalli-Delhi Fold Belt**, where **ancient rock layers were folded millions of years ago**.
  - Although major tectonic activity has reduced, **active faults in the region still trigger mild earthquakes**.
- **Role of Local Faults in Delhi Earthquakes**
  - Delhi has several **active local faults**, such as:
    - Mahendranagar Fault
    - Sohana Fault
  - These faults can generate earthquakes up to **magnitude 6**.

Key NDMA Guidelines on Earthquake Preparedness

- **Earthquake-Resistant Infrastructure:**
  - Implement **seismic codes (IS 1893, IS 4326, IS 13828)** for building safety.
  - Retrofitting of old and vulnerable structures to enhance earthquake resistance.
  - Enforce strict **land-use zoning laws** to avoid construction on seismic fault lines.
- **Early Warning & Monitoring**
  - Strengthening **seismic monitoring networks** through the Indian Meteorological Department (IMD).
  - Promoting **earthquake early warning systems** to alert citizens and authorities.
  - Ensuring **real-time data sharing** between disaster management agencies.
- **Public Awareness & Capacity Building**
  - Conduct **earthquake drills** in schools, offices, and public places.
  - Educate people on **Drop, Cover, and Hold** techniques for self-protection.
  - Disseminate information through **TV, radio, mobile alerts, and social media**.
- **Emergency Response & Rescue**
  - Train **National Disaster Response Force (NDRF)** and local responders for rapid deployment.
  - Develop **Incident Response Teams (IRTs)** at district and state levels.
  - Establish **Emergency Operation Centers (EOCs)** for quick coordination during disasters.
- **Critical Infrastructure Protection**
  - Strengthen **hospitals, schools, bridges, and power stations** against seismic shocks.
  - Conduct periodic **safety audits** of essential services and public utilities.
  - Ensure **uninterrupted communication networks** for emergency coordination.
- **Community Participation & Training**
  - Encourage **Resident Welfare Associations (RWAs)** to form **local disaster management committees**.
  - Train volunteers in **first aid, search & rescue, and fire safety**.
  - Promote **structural and non-structural safety measures** in housing societies.

CHINA'S EAST REACTOR

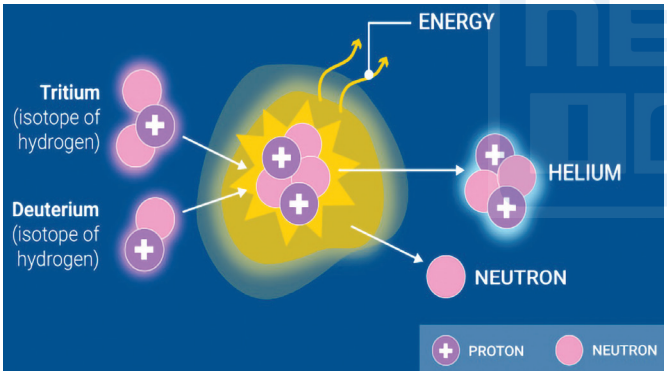
Chinese scientists reported that they maintained a plasma at a temperature of 100 million degrees C for about 1,066 seconds in a nuclear fusion reactor Experimental Advanced Superconducting Tokamak (EAST).

About EAST Reactor

- **Location**: Situated at the **Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP)** in Hefei, China.
- **Operational Since**: 2006.
- **Purpose**: Designed to advance **nuclear fusion research** by replicating the **Sun's fusion process**.
- **Goal**: Achieve **sustained high-temperature plasma confinement**, a key step toward clean and limitless energy.
- **Function**: Acts as a **testing platform** for **materials, superconducting technology, and plasma control methods**, supporting future reactors like **ITER**.

Nuclear Fusion:

- **Process**: Two **light atomic nuclei** fuse to form a **heavier nucleus**, releasing a massive amount of energy.
- **Natural Example**: Powers **stars**, including the **Sun**.
- **Potential**: Considered a **clean and virtually limitless energy source** for the future.



Significance of Fusion Energy

- **Clean Energy Source:** Produces no greenhouse gas emissions, helping combat climate change. This makes fusion a sustainable alternative to fossil fuels, reducing air pollution.
- **Virtually Limitless Fuel:** Uses hydrogen isotopes (deuterium and tritium), which are abundant in seawater and easily available. This ensures a long-term, sustainable energy supply without resource depletion.
- **High Energy Yield:** A small amount of fuel generates enormous energy, making it highly efficient. A single gram of fusion fuel can produce as much energy as tons of fossil fuels.
- **No Long-Lived Radioactive Waste:** Unlike nuclear fission, fusion produces minimal radioactive waste, reducing environmental concerns. Any byproducts decay quickly, minimizing long-term storage issues.
- **Inherent Safety:** No risk of meltdown or catastrophic failures, as fusion reactions naturally stop if conditions become unstable. This eliminates the need for complex and costly safety measures required in fission plants.
- **Energy Independence:** Reduces reliance on fossil fuels and enhances global energy security. Countries can generate their own energy, reducing geopolitical tensions over fuel resources.
- **Supports Scientific Advancement:** Drives innovations in plasma physics, superconducting technology, and materials science. These advancements benefit various industries, from medicine to space exploration.
- **Potential for Future Power Grids:** Can provide a stable, large-scale energy supply, revolutionizing the global power infrastructure. Fusion could enable a transition to fully renewable and carbon-free energy systems.

Comparision of Nuclear Fission and Fusion

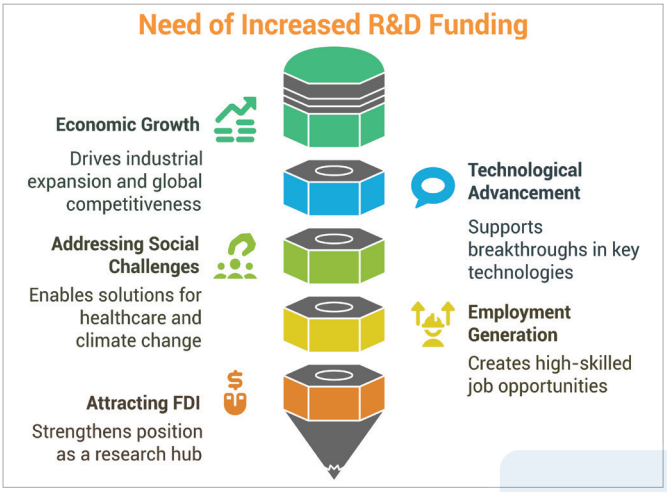
Nuclear Fission	Nuclear Fusion
A heavy nucleus breaks up to form two lighter nuclei.	Two nuclei combine to form a heavy nucleus.
It involves a chain reaction.	Chain reaction is not involved.
The heavy nucleus is bombarded with neutrons.	Light nuclei are heated to an extremely high temperature.
We have proper mechanisms to control fission reaction for generating electricity.	Proper mechanisms to control fusion reaction are yet to be developed.
Disposal of nuclear waste is a great environmental problem.	Disposal of nuclear waste is not involved.
Raw material is not easily available and is costly.	Raw material is comparatively cheap and easily available.

International Thermonuclear Experimental Reactor (ITER):

- **Collaboration**: Involves **China, Europe, Japan, India, South Korea, Russia, and the United States**.
- **India's Role**: Formally joined in **2005**.
- **Location**: Being constructed in **France**.
- **Objective**: To **demonstrate the feasibility** of fusion energy as a **sustainable power source**.
- **Operational Timeline**: Expected to become the **world's largest nuclear fusion reactor** by **2035**.
- **Tokamak Design**: A **doughnut-shaped device** that uses **magnetic confinement** to sustain controlled thermonuclear fusion.

RESEARCH AND DEVELOPMENT IN INDIA

The Union Budget 2024-25 has allocated ₹ 20,000 crore to the Ministry of Science and Technology (MoST) to bolster research, development, and innovation (R&D&I).



Issues in Research and Development Sector:

- **Low Budget Allocation:** India's R&D spending is only 0.6%-0.7% of GDP, far below global leaders like the U.S. (2.8%), China (2.1%), Israel (4.3%), and South Korea (4.2%), limiting large-scale innovation.
- **Large-Scale Brain Drain:** Many top scientists migrate abroad due to better funding and opportunities, leading to a shortage of skilled researchers. India had only 260 researchers per million in 2020, compared to China's 1,602.
- **Lack of Inclusivity in R&D:** Socio-cultural and systemic barriers, such as gender biases, limited funding for marginalized groups, and underrepresentation in leadership roles, restrict women and disadvantaged communities from participating in research, reducing the talent pool and weakening innovation.
- **Challenges in Translating Research into Technology:** India's focus on basic sciences over applied research, along with weak industry-academia collaboration, slows the commercialization of innovations.
- **Persistent Gaps in the Education System:** Low enrollment in advanced research programs, limited Ph.D.-offering institutions, and inadequate monitoring of R&D projects hinder research-driven education and impact.

Government Initiatives to Strengthen R&D

- **National Research Foundation (NRF)**: Established under the National Education Policy **(NEP)** 2020, NRF aims to boost research funding, encourage collaboration, and promote innovation across universities and industries.
- **Startup India & Innovation Support**: GOI launched Startup India, Standup India, and National Initiative for Developing and Harnessing Innovations **(NIDHI)** to promote deep-tech, AI, and biotech startups through grants, incubators, and tax benefits.
- **Foreign Collaboration & Joint R&D**: India has signed research cooperation agreements with US, EU, Japan, and Israel, fostering global partnerships in AI, semiconductors, space, and clean energy.
- **Boosting R&D in Higher Education:**
  - **The Institutes of Eminence (IoE)** program enhances research capacity in top universities.
  - **IMPRINT (Impacting Research Innovation and Technology)** focuses on applied research in critical sectors.
  - **Prime Minister's Research Fellowship (PMRF)** supports PhD scholars in cutting-edge research.

WAY FORWARD

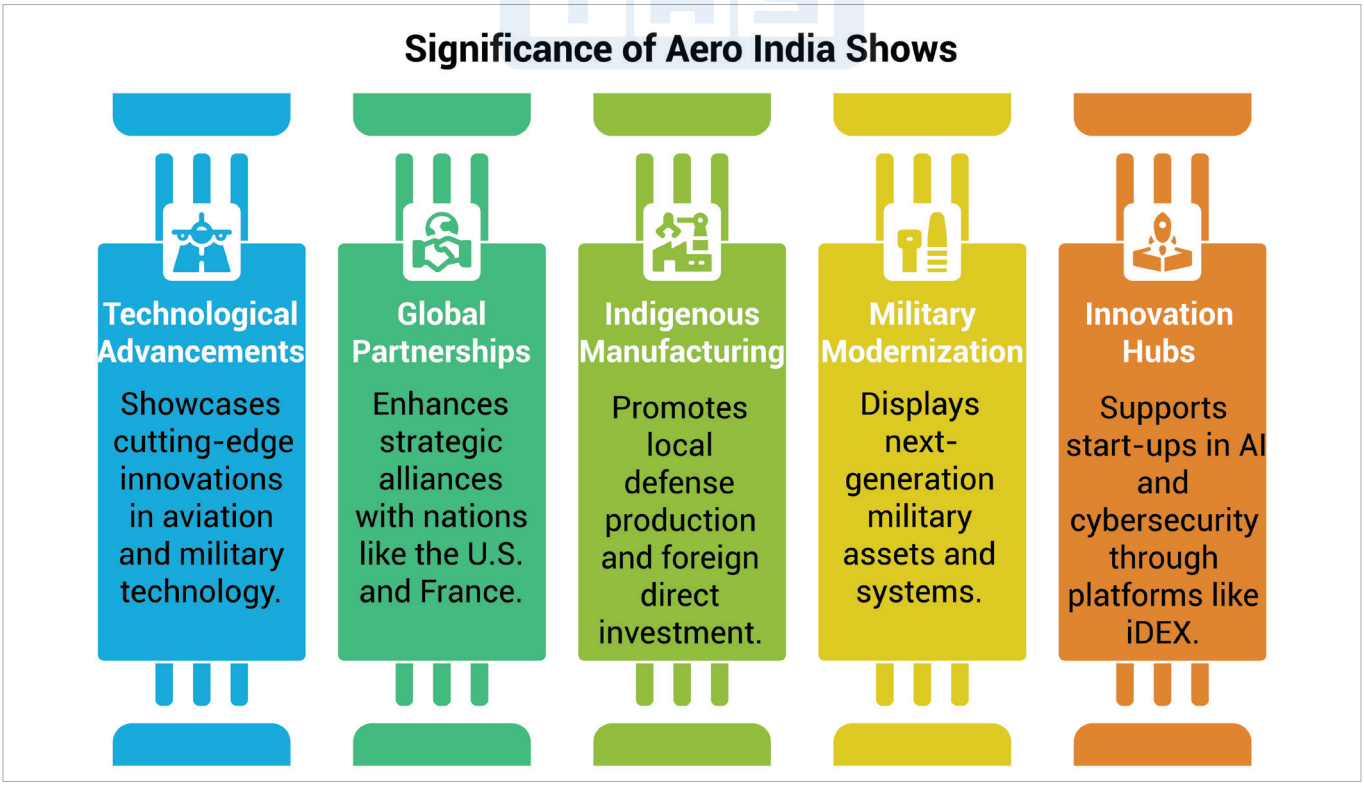
- **Increase R&D Expenditure:** India should aim to raise **R&D spending to 2% of GDP** within the next five years to match global benchmarks. **Greater financial contributions** from corporate and philanthropic sectors can help bridge funding gaps.
- **Enhance Private Sector Engagement:** Providing **tax incentives, subsidies, and grants** will encourage corporate investment in research. Establishing **Industry Research Clusters** can foster collaboration and drive innovation.
- **Bridge Industry-Academia Gaps:** Strengthening **university-industry partnerships** will help in applying research to real-world problems. Launching **technology transfer programs** will ensure lab discoveries evolve into market-ready solutions.
- **Improve Research Infrastructure:** Developing **world-class R&D centers, innovation hubs, and testing facilities** in universities and public institutions is essential. Increased investment in **high-tech labs, supercomputing centers, and AI-based research platforms** will further boost innovation.
- **Retain & Nurture Talent:** Offering **competitive fellowships, research grants, and global exposure** will help retain top Indian scientists. Implementing **reverse brain drain programs** will attract Indian-origin researchers working abroad.

AERO INDIA SHOW 2025

It took place at the Indian Air Force Station in Yelahanka, Bengaluru from February 10 to 14.

Key Highlights

- **Unprecedented Fighter Jet Display:** Aero India 2025 will feature the Russian Su-57 and the American F-35, two of the world's most advanced fighter jets.
  - Their presence highlights India's growing influence in the global defence sector.
- **The Russian Su-57 – Air Superiority & Stealth:** A **fifth-generation** multirole fighter, the Su-57 is designed for air dominance and ground attack missions. It boasts stealth technology, advanced avionics, and super manoeuvrability, making it a formidable force in modern aerial warfare.
- **The American F-35 – The Ultimate Stealth Fighter:** The Lockheed Martin F-35 Lightning II is a **5th-gen stealth fighter** with cutting-edge avionics, sensor fusion, and electronic warfare capabilities. Its inclusion in the Aero India show signifies deepening India-U.S. defence ties and India's growing role in global security.
- **Rare Opportunity for Direct Comparison:** The presence of both aircraft allows aviation experts and defence analysts to compare their capabilities firsthand, providing valuable insights into modern fighter jet technology.
- **India's Indigenous Breakthrough -The AMCA:** Aero India 2025 will showcase a model of the **Advanced Medium Combat Aircraft (AMCA),** India's first indigenous fifth-generation stealth fighter, developed by HAL and ADA.
  - The AMCA will be a twin-engine, multi-role fighter with stealth, super cruise capability, and advanced avionics, marking a major step toward self-reliance in military aviation.
- **Fostering Innovation- The 'Manthan' Platform:** Aero India 2025 will host 'Manthan', a platform dedicated to start-ups, fostering innovation in defence and aerospace technologies.
- **Boosting Indigenous Defence Capabilities: Supported by iDEX (Innovations for Defence Excellence),** the initiative will showcase advancements in unmanned aerial systems (UAS), AI-driven defence systems, cybersecurity, and electronic warfare, promoting homegrown solutions for military applications.
- It serves as a strategic platform for innovation, global collaboration, and advancing cutting-edge aerospace and defence technologies.



JET FIGHTER GENERATIONS

1st Gen jet fighters (1940s-1950s) used turbojets for propulsion instead of earlier piston-driven aircraft. (Messerschmitt Me262, Mystere-IV, MiG-15, etc.

2nd Gen fighters (1950s-1960s) Integrated new technologies, swept or delta wings & guided missiles for BVR (Beyond Visual Range) combat. (MiG-21, Sukhoi-7, F-104 Starfighter, etc.)

3rd Gen fighters (1960s-1970s) Inducted improved radars, missiles and avionics. (Mirage-III, MiG-25, F-4 Phantom-II, etc.)

4th Gen fighters (1970s-1990s) Incorporated fly-by-wire controls and multi-role capabilities. (Mirage-2000, MiG-29, Sukhoi-27, Tornado, F-16 Fighting Falcon, etc.)

4.5 Gen fighters (1990s-onwards) Use more advanced avionics and electronics, with some stealth. (Sukhoi-30MKI, Gripen, Eurofighter Typhoon, F-16F Desert Falcon, F/A-18 Super Hornet, etc.

5th Gen jet fighters Multi-role or swing-role but also incorporate advanced stealth technology, composite materials, supercruise (achieve supersonic cruise speeds without use of afterburners), thrust-vectoring & multi-sensor integrated avionics.

Only **fully-operational 5th-gen fighter** at present is the **American F/A-22 'Raptor', developed** for **$28 billion**, with each **fighter** costing **$350-400 million extra**. Two FGFA in **pipeline** are American **F-35 'Lightning-II'** Joint Strike Fighter and Russian **Sukhoi T-50** or **PAK-FA**.

KEY ISSUES IN INDIA'S DEFENCE AIRCRAFT INDUSTRY

- **Dependence on Imports:** India is the **world's largest arms importer**, with **45% of defence aircraft** sourced from countries like Russia, France, and the U.S. (SIPRI Report 2023).
  - ***Example:*** The **Rafale deal** (₹59,000 crore) with France highlights the reliance on foreign aircraft.
- **Delayed Projects & Cost Overruns:** The **Tejas (LCA)** project took over **30 years**, with the first order placed only in **2021** for 83 Mk-1A jets at **₹48,000 crore**.
  - The AMCA (Advanced Medium Combat Aircraft) project is still in the development phase, delaying India's stealth fighter program.
- **Limited Indigenous R&D & Manufacturing:** India's **jet engine development** (*e.g.*, Kaveri engine) has failed to meet expectations, forcing reliance on **GE's F404 & F414 engines** for Tejas.
  - HAL's production rate is **8 Tejas jets per year**, much lower than global standards (e.g., China produces over **25 JF-17s annually**).
- **Aging Fleet & Modernization Challenges:** The Indian Air Force (IAF) needs **42 fighter squadrons** for full combat readiness but currently operates only 31, with aging **MiG-21s still in service**.
  - The Multi-Role Fighter Aircraft **(MRFA) program** (₹1.3 lakh crore) for **114 multi-role fighters** is stuck in delays, affecting air force modernization.

THREE-LANGUAGE POLICY UNDER NEP 2020

Recently, the Union Government halted funds to Tamil Nadu government under Samagra Shiksha for not implementing NEP 2020 and the three-language formula.

About

- **Evolution of the Formula:** The **three-language formula** introduced in **1968** emphasized:
  - **Hindi, English, and a modern Indian language (preferably a southern language)** in **Hindi-speaking states**.
  - **Hindi, English, and a regional language** in **non-Hindi-speaking states**.
  - The **NEP 2020** has introduced **greater flexibility**, ensuring that **no language is imposed on any state**.
- **Language Promotion and Encouragement:** While maintaining flexibility, **NEP 2020 encourages the inclusion of specific languages**, particularly:
  - **Sanskrit**, which is given special emphasis.
  - **Classical languages** such as **Tamil, Telugu, Kannada, Malayalam, Odia, Pali, Persian, and Prakrit** are recommended as options.
  - The policy also promotes **foreign languages** (e.g., **Korean, Japanese, Thai, French, German, Spanish, Portuguese, Russian**) at the **secondary level**.
- **Bilingual and Multilingual Education:**
  - The policy advocates **bilingual education**, particularly **mother tongue alongside English**.
  - Students are expected to learn **two Indian languages up to Class 10**, while in **Classes 11 and 12**, they may choose **one Indian and one foreign language**.
  - Emphasis on using the **mother tongue or local language as the medium of instruction** till at least **Grade 5**, preferably up to **Grade 8 and beyond**.
- **Research-based rationale:**
  - Studies highlight that **multilingualism enhances cognitive abilities**, and **children learn languages quickly between ages 2 and 8**.
  - The policy encourages **exposing children to multiple languages** from the **Foundational Stage onwards**.
- **Implementation Challenges:** Despite the **policy provisions**, implementation remains **inconsistent**:
  - In **Haryana**, Tamil, introduced as the **second language in 1969**, was discontinued in **2010** due to a **lack of speakers**.
  - In **Himachal Pradesh**, **Telugu and Tamil** could not be offered due to a **shortage of teachers**.
- **Practical Adaptation:**
  - States like **Assam** have introduced **bilingual textbooks** (e.g., **English and Assamese/Bodo/Bengali**).
  - **Andhra Pradesh** introduced **bilingual textbooks** with **Telugu and English** in **2023**.
  - In **Haryana**, anganwadis use **colourful textbooks with Hindi and English fonts** for preschool education.
- **Textbook and Resource Development:**
  - To support **learning in the mother tongue**, **NCERT released digital textbooks in 104 regional languages and dialects** in **2024**.
    - ***Examples*** include **Bengali, Khandeshi, Tulu, Ladakhi, Pashto, Bhili, Dogri, Lahuli (Pattani), Car Nicobarese**, among others.
  - **State Councils of Educational Research and Training (SCERTs)** are responsible for **language-specific translations**.
- **Insights from AISES Survey:**
  - The **Eighth All India School Education Survey (AISES)** by **NCERT** highlights a **decline in mother tongue instruction** from **92.07% (Seventh Survey) to 86.62% (Eighth Survey)** at the **primary stage**.
  - **Urban-Rural Divide:**
    - **Rural Areas:** Decline from **92.39% to 87.56%**.
    - **Urban Areas:** Decline from **90.39% to 80.99%**.
  - Indicates a **gradual reduction in the use of mother tongue as a medium of instruction** over time.

Significance of the Three-Language Formula

- **Promotes National Integration:** Encourages linguistic harmony by fostering familiarity with multiple languages, promoting unity in a diverse country like India.
- **Enhances Cognitive Abilities:** Learning multiple languages improves cognitive flexibility, memory retention, and problem-solving skills.
- **Facilitates Mobility:** Helps individuals adapt to different linguistic regions for education, employment, or migration within India.
- **Preserves Regional Languages:** Ensures that regional languages are not overshadowed by dominant languages, fostering linguistic diversity.
- **Global Competence:** English proficiency alongside regional and national languages enhances global communication and competitiveness.
- **Promotes Cultural Understanding:** Encourages students to appreciate the cultural richness associated with different languages.
- **Employment Opportunities:** Knowledge of multiple languages can be an asset in the job market, particularly in sectors like tourism, administration, and public services.
- **Educational Inclusivity:** Reduces linguistic barriers, making education more accessible and inclusive for students from diverse linguistic backgrounds.

Concerns Regarding the Three-Language Formula

- **Implementation Challenges:** States with strong linguistic identities (like Tamil Nadu) resist imposing additional languages, leading to conflicts.
- **Political Resistance:** Some states view it as an attempt to impose Hindi, sparking opposition and protests, especially in non-Hindi-speaking regions.
- **Burden on Students:** Learning three languages can add to the academic load, especially for younger students.
- **Lack of Skilled Teachers:** Shortage of qualified teachers proficient in three languages affects the quality of education.
- **Regional Disparities:** States with distinct linguistic identities may feel their languages are being sidelined or neglected.
- **Administrative Hurdles:** Designing and implementing a uniform language curriculum across states poses logistical challenges.
- **Resource Constraints:** Translating textbooks and creating study materials in three languages require significant resources.

Additional Information

- **Switzerland - Quadrilingual Policy**
  - Switzerland recognizes four official languages: German, French, Italian, and Romansh.
  - Students learn at least two languages during their school years, typically one national language and English.
  - Promotes cultural harmony and multilingual proficiency while respecting linguistic diversity.
- **South Africa - Multilingual Policy (11 Official Languages)**
  - South Africa's Constitution recognizes 11 official languages to reflect its multicultural society.
  - Educational institutions must accommodate multiple languages, often using bilingual or trilingual instruction.
  - Enhanced inclusivity and representation of diverse communities.
- **Belgium - Trilingual Policy (Dutch, French, and German)**
  - Belgium has three official languages—Dutch, French, and German—due to its cultural and regional diversity.
  - Education policies differ by region (Flemish, French, and German-speaking communities), but students are encouraged to learn at least one additional official language.
- **Philippines - Mother Tongue-Based Multilingual Education (MTB-MLE)**
  - The Philippines has over 170 languages. MTB-MLE was introduced to use the mother tongue as the medium of instruction in early grades.
  - Mother tongues are used up to Grade 3, after which Filipino and English become the primary languages of instruction.

Way Forward

- **Flexible Implementation:** Allow states to customize the language combination according to regional diversity while maintaining the core objective of multilingualism.
- **Promotion of Regional Languages:** Focus on strengthening regional languages as primary mediums of instruction, especially in early education, to ensure cognitive development and cultural preservation.
- **Global Language Proficiency:** Introduce English gradually as a secondary language to build global competencies without overwhelming young learners.
- **Capacity Building for Teachers:** Train teachers to effectively deliver multilingual education through innovative pedagogy and resource availability.
- **Curriculum Standardization:** Develop standardized yet adaptable curricula that cater to diverse linguistic needs, ensuring uniformity without undermining regional autonomy.
- **Digital and Technological Support:** Use educational technology to create interactive content in multiple languages to make learning engaging and accessible.
- **Awareness and Community Involvement:** Conduct awareness campaigns to inform parents and communities about the benefits of the Three-Language Formula for career prospects and cognitive growth.

Samagra Siksha Abhiyan (SSA)

- **Scope and Coverage:** The scheme covers **pre-school to Class XII**, aiming to provide **inclusive and equitable quality education** at all levels.
- **Integration of Previous Schemes:** It consolidates three previous **Centrally Sponsored Schemes**:
  - Sarva Shiksha Abhiyan (SSA)
  - Rashtriya Madhyamik Shiksha Abhiyan (RMSA)
  - Teacher Education (TE)
- **Major Objectives:**
  - **Alignment with NEP 2020:** Assist **States and UTs** in implementing recommendations of the **National Education Policy 2020**.
  - **Implementation of RTE Act, 2009:** Support **States in ensuring the Right of Children to Free and Compulsory Education**.
  - **Foundational Literacy and Numeracy:** Emphasize **basic literacy and numeracy skills** as foundational competencies.
  - **Capacity Building for Teacher Training:** Strengthen and upgrade **SCERTs/SIEs and DIETs** as **nodal agencies** for teacher training.
  - **Promotion of Vocational Education:** Encourage the integration of **vocational education** at various levels of schooling.
- **Financial Assistance:** The scheme provides **financial support to all States and UTs** to facilitate the implementation of the above activities.

VIJAY DURG

Recently, Fort William in Kolkata, the headquarters of the Eastern Army Command, has been renamed as Vijay Durg.

About:

- **Location**
  - Fort William is located on the **eastern banks of the Hooghly River** in **Kolkata, West Bengal**.
  - Today, it serves as the **headquarters of the Eastern Army Command** of the Indian Army.
  - The fort remains a **restricted military area**, housing around **10,000 army personnel**.
- **Background**
  - The fort was **originally built between 1696 and 1702** by the **British East India Company** to strengthen their presence in Bengal.
  - **John Goldsborough** supervised the initial construction, which was completed in **1706**.
  - It was named after **King William III of England** to honor the British monarch.
  - It was established to train British civil and military officials of the East India Company in India's vernacular languages for effective administration.
- **Old Fort William (1696-1756)**
  - The **Mughal Emperor Aurangzeb granted permission** for its construction as part of the British efforts to expand trade.
  - Fort William soon became the **administrative and military center of British operations in Bengal**.
  - The fort was **not heavily fortified**, making it vulnerable to external threats.
  - In **June 1756, Nawab Siraj-ud-Daulah of Bengal attacked and captured the fort**, leading to a major conflict between the British and the Nawab.
  - The **infamous "Black Hole of Calcutta" incident** occurred, where **many British prisoners were locked in a small dungeon overnight, leading to suffocation and death**.
  - Following the capture, Siraj **renamed Calcutta as "Alinagar"**, honoring his grandfather, **Aliwardi Khan**.
- **New Fort William (1758-1781)**
  - After **defeating Siraj-ud-Daulah in the Battle of Plassey (1757)**, **Robert Clive, along with Admiral Charles Watson, recaptured the fort**.
  - To prevent future attacks, the British decided to construct a **new and more fortified version of Fort William** at a different location.
  - The foundation for the new fort was laid in 1758 by Robert Clive. The construction took over **two decades** and was completed in **1781**.
  - From **1775 onwards, the fort also became a center for Indian Ordnance factories**, strengthening British military operations in India.

Battle of Plassey (1757)

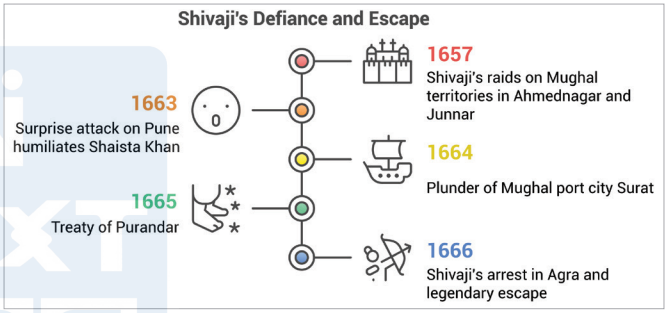
- **Location**: Took place on **June 23, 1757**, at **Plassey (Palashi), Bengal**, near the **Bhagirathi River**.
- **Belligerents**:
  - **British East India Company**: Led by **Robert Clive**, with around **3,000 troops**, including European soldiers and Indian sepoys.
  - **Nawab of Bengal**: **Siraj-ud-Daulah**, with an army of **50,000 soldiers**, supported by artillery and cavalry.
  - **French East India Company**: Led by **Jean Law**, provided artillery and military support to the Nawab.
  - **Defecting Nawab Commanders**: **Mir Jafar, Rai Durlabh, and Yar Lutuf Khan**, who conspired with the British and deliberately avoided fighting.
- **Causes:**
  - **British interference** in Bengal's politics and trade.
  - **Siraj-ud-Daulah's opposition** to British fortifications in Calcutta.
  - **Capture of Fort William (1756)** and the **Black Hole of Calcutta** incident, leading to British retaliation.
  - **British bribery and secret alliances** with Mir Jafar and other commanders to weaken the Nawab's forces.
- **Battle Strategy:**
  - British forces used superior artillery and **diplomatic manipulation** to turn Nawab's allies against him.
  - **Mir Jafar and other commanders withheld their troops**, leading to Siraj-ud-Daulah's defeat despite numerical superiority.
  - The battle lasted **about 11 hours**, with heavy rainfall affecting the Nawab's gunpowder, while the British kept theirs dry under tarpaulin covers.
- **Outcome:**
  - **British victory** led to the **fall of Siraj-ud-Daulah**, who later **fled but was captured and executed**.
  - **Mir Jafar became the new Nawab**, acting as a British puppet.
  - The British gained **control over Bengal's wealth and resources**, significantly boosting their power.
- **Significance:**
  - **Established British dominance in Bengal**, marking the **beginning of colonial rule in India**.
  - Gave the British **control over Bengal's vast revenue**, funding their future military campaigns.
  - Weakened Indian rulers by exposing their **internal betrayals and British manipulation tactics**.
  - Paved the way for **British expansion across India**, leading to the Battle of Buxar (1764) and later the British Raj.

CHHATRAPATI SHIVAJI MAHARAJ

Recently, Prime Minister Narendra Modi paid tribute to Chhatrapati Shivaji Maharaj on his birth anniversary.

About

- **Early Life**
  - **Born on February 19, 1630,** at **Shivneri Fort, Pune, Maharashtra**, Shivaji was raised in a politically turbulent era, with various regional and foreign powers vying for control over the Deccan.
  - His father, **Shahaji Bhonsle**, was a **Maratha general** under the **Bijapur Sultanate**, holding important **jagirs of Pune and Supe**.
  - His mother, **Jijabai**, played a crucial role in shaping his vision and character, instilling values of **Hindu pride, bravery, and self-rule**.
  - He displayed **military brilliance from a young age**, capturing **Torna Fort in 1645** and later **Kondana Fort**, marking the beginning of his struggle against foreign rule.
- **Major Battles & Military Achievements**
  - ***Battle of Pratapgad (1659):***
    - **Afzal Khan**, a general of the **Bijapur Sultanate**, was sent to eliminate Shivaji.
    - Shivaji, aware of Afzal Khan's deceitful tactics, lured him to a meeting and **killed him using a concealed tiger claw weapon (Bagh Nakh)**.
    - This victory **boosted Maratha morale** and established Shivaji as a serious contender in the Deccan.
  - ***Battle of Pavan Khind (1660):***
    - Shivaji's trusted general, **Baji Prabhu Deshpande**, along with **300 Maratha warriors**, fought against **Siddi Masud** to **ensure Shivaji's safe retreat to Vishalgad Fort**.
    - Despite being **heavily outnumbered**, the Marathas fought valiantly, giving Shivaji enough time to escape.
    - This **heroic last stand** is remembered as one of the **greatest examples of sacrifice and loyalty**.
  - ***Sacking of Surat (1664):***
    - Surat was a **wealthy Mughal trading port**, contributing significantly to the empire's economy.
    - Shivaji's forces **raided the city and looted massive wealth**, weakening the Mughal treasury.
    - This move demonstrated **Maratha naval and military prowess**, alarming Aurangzeb.
  - ***Battle of Purandar (1665):***
    - Fought between the **Mughal Empire and Maratha forces**.
    - After intense fighting, **the Treaty of Purandar** was signed with **Raja Jai Singh I**, leading to the **surrender of 23 forts** and Shivaji's agreement to send his son **Sambhaji to the Mughal court**.
  - ***Battle of Sinhagad (1670):***
    - Shivaji's commander, **Tanaji Malusare**, led a daring **night attack** on **Sinhagad Fort**, which was under **Udaybhan Rathod**, a Mughal commander.
    - Despite his death in battle, the **Marathas won the fort**, leading Shivaji to famously remark, **"Gad aala, pan Sinha gela" (We have won the fort, but lost the lion).**
  - ***Battle of Sangamner (1679):***
    - This was **Shivaji's last battle**, fought against the **Mughal forces**.
    - Although the Marathas suffered losses, **Shivaji successfully escaped**, ensuring the survival of his empire.

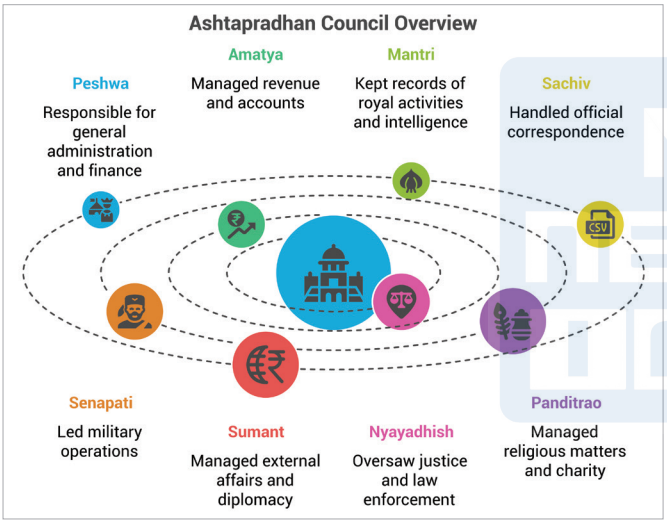


- **Expansion of the Maratha Empire**
  - After his escape, Shivaji embarked on **aggressive military campaigns**, recapturing **several lost forts from the Mughals within four months in 1670**.
  - His **guerrilla warfare tactics**, known as **Ganimi Kava**, helped his smaller forces **outmaneuver much larger Mughal armies**.
  - He expanded his influence in **Deccan, Konkan, and parts of Karnataka**, consolidating Maratha power.
- **Coronation & Establishment of Swarajya**
  - **Crowned as Chhatrapati on June 6, 1674, at Raigad Fort**.
  - Took on grand titles like **Shakakarta (Founder of an Era), Kshatriya Kulavantas (Pride of the Kshatriyas), and Haindava Dharmodhhaarak (Protector of Hindu Dharma)**.
  - Established an **efficient administrative system**, including **Ashta Pradhan (Council of Eight Ministers)** to govern the empire.
  - Focused on **naval power**, strengthening **coastal defenses** and **building a formidable Maratha navy** to counter foreign powers like the Portuguese and the British.
- **Legacy & Death**
  - Shivaji's rule laid the foundation for a **powerful Maratha Empire**, which later became **the dominant force in India during the 18th century**.

- His policies promoted **religious tolerance, good governance, and protection of local cultures**.
- **Died on April 3, 1680**, at **Raigad Fort**, leaving behind a strong empire that continued under his son, **Sambhaji Maharaj**.
- His **vision of Swarajya (self-rule) inspired future generations**, making him one of India's most revered historical figures.

➲ **Central Administration**

- Shivaji **personally headed the government** and was the **supreme authority** in both civil and military affairs.
- He was assisted by an **eight-member council of ministers**, known as the **'Ashtapradhan'**, which handled different aspects of governance. These ministers were **advisors rather than independent decision-makers**, and their power was subject to Shivaji's direct supervision.
- The **Peshwa**, also called **Mukhya Pradhan**, originally served as the **chief advisor**, playing a key role in administration and finance.



➲ **Revenue Administration**

- Shivaji introduced **several revenue reforms** to ensure fair taxation and eliminate **exploitation by landlords and officials**.
- ***Abolition of Jagirdari System:***
  - He **replaced feudal jagirs with the Ryotwari System**, where revenue was directly collected from farmers by the state.
  - This reduced the influence of local landlords (Deshmukhs and Deshpandes) and ensured better state control.
- ***Strict Supervision of Mirasdars:***
  - Mirasdars were hereditary landowners who previously enjoyed unchecked power.
  - Shivaji closely monitored them to **prevent corruption and oppression** of peasants.
- ***Land Measurement System (Kathi System):***
  - **Every piece of land was measured using Rods (Kathi)** to ensure accurate taxation.
  - This system was **inspired by Malik Ambar's revenue policies**.
- ***Additional Revenue Sources:***
  - **Chauth (One-Fourth Tax):** A **25% tax** levied on territories **outside Shivaji's kingdom** as protection money, ensuring the Marathas would not raid them.
  - **Sardeshmukhi (Additional 10% Tax):** Imposed on lands outside the Maratha kingdom as an **extra levy** over and above existing taxes.

Key Features of the Maratha Military System

➲ **Guerrilla Warfare (Ganimi Kava)**

- The Marathas excelled in **hit-and-run tactics**, utilizing **hilly terrain, forests, and forts** to their advantage.
- Surprise attacks, ambushes, and rapid retreats disrupted enemy supply lines and morale.

➲ **Fortress-Based Defense**

- Over **300 strategically located forts** (e.g., Raigad, Sinhagad, Pratapgad) provided strongholds for defense and administration.
- Forts were **self-sufficient**, with provisions, water reservoirs, and escape routes.

➲ **Highly Mobile Cavalry**

- The Maratha cavalry was fast-moving and adaptable, avoiding direct confrontation with larger armies.
- Used for **raiding, reconnaissance, and rapid counter-attacks** to weaken enemy forces.

➲ **Decentralized Command Structure**

- Instead of a centralized army, power was divided among **various commanders (Sardars, Peshwas, Senapatis)**.
- Local chieftains had autonomy but were bound by loyalty to the **Chhatrapati (king)**.

➲ **Effective Use of Spies and Intelligence**

- A well-organized **espionage network** provided crucial intelligence on enemy movements.
- Spies (Barkandaz) infiltrated enemy ranks to **spread misinformation and weaken morale**.

➲ **Naval Power under Shivaji Maharaj**

- Established a **strong navy** to counter European and Mughal sea power.
- Built **fortified naval bases** (e.g., Sindhudurg, Vijaydurg) for maritime defense and trade protection.

➲ **Adaptability and Use of Modern Weapons**

- Employed **European artillery experts** to modernize weapons and siege tactics.
- Effective use of **rockets, cannons, and muskets** alongside traditional swords and spears.

➲ **Diplomacy and Strategic Alliances**

- Formed **alliances with Rajputs, Jats, and European powers** when beneficial.
- Used diplomacy to weaken enemies before launching military offensives.

1 POLITY & GOVERNANCE

KARNATAKA ALLOWS PASSIVE EUTHANASIA

Context

In a historic move, the Karnataka Health Department issued an order to implement the Supreme Court's directives on passive euthanasia.

About

- **Euthanasia** is the practice of intentionally ending a person's life to relieve them of suffering, usually due to a terminal illness or severe pain. There are two types:
  - **Passive Euthanasia:** It is withholding or withdrawing Life-Sustaining Treatment (LST), allowing a terminally ill patient to die naturally.
    - It is Legal in India (as per Supreme Court rulings in 2018 & 2023) under strict medical and legal procedures.
    - The **Ministry of Health and Family Welfare (MoHFW)** has released draft guidelines titled **"Guidelines for Withdrawal of Life Support in Terminally Ill Patients."**
  - **Active euthanasia** refers to the deliberate act of ending a person's life to relieve them from suffering, usually through the administration of lethal substances or other direct means.

Supreme Court's Directives on Passive Euthanasia:

- **Legal Recognition (2018 & 2023 Rulings):** The Supreme Court legalized passive euthanasia in 2018, recognizing the right to die with dignity under **Article 21 of the Constitution.**
  - In 2023, the court simplified procedures for withdrawing life support, ensuring a structured and ethical approach.
- **Conditions for Passive Euthanasia:** Applicable to terminally ill patients with no hope of recovery.
  - Allowed when the patient is in a persistent vegetative state or prolonged suffering from an incurable condition.
- **Advance Medical Directive (AMD) or 'Living Will':** Any competent adult can create an AMD specifying their medical treatment preferences in case they lose decision-making capacity.
  - The AMD can nominate two representatives to make decisions on the patient's behalf.
- **Approval Process for Life Support Withdrawal:** Hospitals must set up Primary and Secondary Medical Boards (each with three senior doctors).
  - The District Health Officer must be involved in the decision.
  - Final decision requires Judicial Magistrate of the First Class (JMFC) approval and reporting to the High Court Registrar.

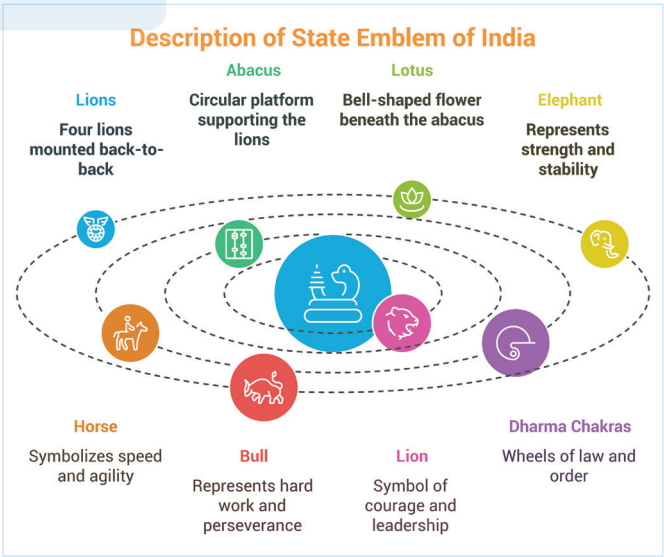
STATE EMBLEM OF INDIA

Context

The Union Home Ministry has noted the improper use of the State Emblem of India, specifically the omission of the motto "Satyamev Jayate".

About

- The adopted State Emblem (since January 26, 1950) shows three lions mounted on an abacus with:
  - A Dharma Chakra in the center.
  - A bull on the right and a galloping horse on the left.
  - Dharma Chakras at the extreme right and left.
  - The bell-shaped lotus was omitted in the adopted design.
- **Motto:** The motto "Satyamev Jayate" (meaning "Truth Alone Triumphs") is written in Devanagari script below the profile of the Lion Capital, forming an integral part of the emblem.
  - The phrase **"Satyameva Jayate"** (सत्यमेव जयते) is taken from the **Mundaka Upanishad**, which is a part of the **Atharva Veda**. It means **"Truth Alone Triumphs."**



Regulations

- The State Emblem of India (Prohibition of Improper Use) Act, 2005, and the State Emblem of India (Regulation of Use) Rules, 2007 restrict the use of the emblem to specified authorities and purposes.

- Omitting the motto or displaying the incomplete design violates the State Emblem of India (Prohibition of Improper Use) Act, 2005.

Sarnath PIllar of Ashoka

- The **pillar** was made of a single block of **polished sandstone**, standing approximately **12 meters (40 feet) high**.
- The **Lion Capital** at the top consists of **four Asiatic lions**, standing back-to-back, symbolizing **power, courage, and the spread of Buddhism in all four directions**.
- Below the lions, the capital features a circular **abacus** decorated with **four animals**—a **lion, elephant, horse, and bull**—representing different phases of Buddha's life.
- The **Dharmachakra (Wheel of Dharma)** is also carved on the abacus, signifying **Buddhist teachings and righteousness**.
- The **original pillar**, now broken, remains at Sarnath, while the **Lion Capital** is preserved in the **Sarnath Museum**.

RIGHT TO BE INFORMED OF GROUNDS OF ARREST

Context

The Supreme Court of India has ruled that informing an accused of the grounds of arrest is not a mere formality but a mandatory constitutional requirement.

Supreme Court Ruling

- The Court held that failing to inform the accused of the reasons for arrest amounts to a **violation of fundamental rights** enshrined under **Article 22 (Part III)** of the Constitution.
- The information must be conveyed in a manner that effectively communicates the grounds of arrest to the accused in a language they understand.

Constitutional Provisions

- **Article 22(1)** of the Indian Constitution states; No person who is arrested shall be detained in custody without being informed, as soon as possible, of the grounds for such arrest.
- The arrested person shall not be denied the right to consult and be defended by a legal practitioner of their choice.

Significance

- **Burden of Proof on Law Enforcement:** If an accused alleges a violation of Article 22(1), the police must prove compliance with the mandate.
- **Judicial Oversight:** Judicial magistrates, when granting remand, are required to ascertain whether compliance with Article 22(1) and other legal safeguards has been met.

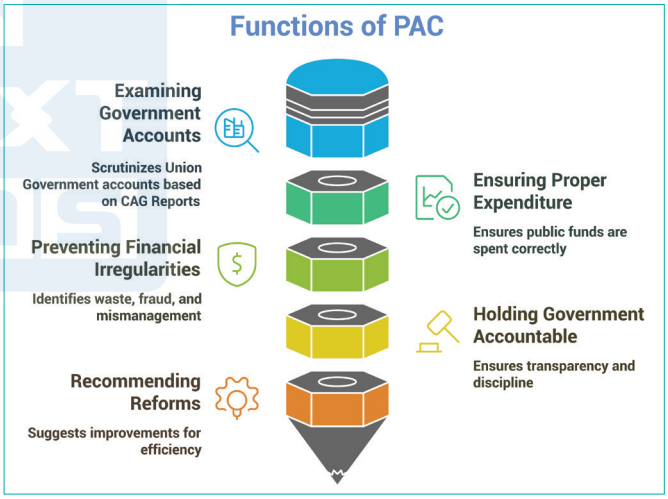
PUBLIC ACCOUNTS COMMITTEE

Context

Public Accounts Committee led by K.C. Venugopal directed the government to review existing rules regarding toll tax on National Highways (NH).

About Public Accounts Committee (PAC):

- **Genesis:** It is one of the oldest parliamentary committees, established in 1921 following the **Montagu Chelmsford Reforms.**
- **Composition:** It is formed every year under **Rule 308 of the Rules of Procedure and Conduct of Business in Lok Sabha.**
  - It consists of up to 22 members (15 from Lok Sabha, and 7 from Rajya Sabha).A Minister is not elected as a member of a Committee.
- **Selection of Members:** Members are elected annually by proportional representation (single transferable vote system) from both houses.
- **Chairperson Appointment:** The Speaker of the Lok Sabha appoints the Chairperson.



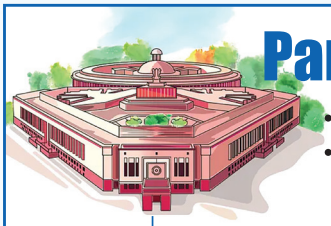
REMOVAL OF JUDGES IN INDIA

Context

Rajya Sabha Chairman emphasized that only Parliament has the constitutional authority to remove a High Court judge

About

- A judge can be removed on the grounds of **'proved misbehaviour' or 'incapacity'** as per **Articles 124 (Supreme Court) and Article 217 (High Court) of the Constitution.**
  - The Constitution does not define 'proved misbehaviour' or 'incapacity.'



Parliamentary Committee System in India

- Independent India inherited the Parliamentary Committee System from the British.
- The Public Accounts Committee (PAC) was established in 1921 under the Government of India Act of 1919.

Parliamentary Committees and the Indian Constitution

Article 105

Defines the **powers, privileges,** and **immunities** of the Indian Parliament, its members, and committees.

Article 118

Grants Parliament the authority to make rules to regulate its procedure and conduct of business.

Functioning of Parliamentary Committees

Scrutiny and Oversight: Parliamentary Committees examine bills, policies, and government functions in detail, providing thorough scrutiny.

Expert Consultation: They consult experts, stakeholders, and ministries to gather diverse inputs for informed decision-making.

Accountability: Committees hold the government accountable by reviewing its actions, expenditures, and policies, ensuring transparency.

Classification of Parliamentary Committees

Broadly, the Parliamentary Committees may be classified into the following categories:

Standing Committees: Permanent and work continuously

Financial Committees	Departmentally Related Standing Committees	Other Standing Committees
E.g.: PAC, Estimates Committee, Committee on Public Undertakings	***Examples:*** *Defence, External Affairs, Finance*	***Examples:*** *Business Advisory, Privileges, House, Purpose, Rules*

Ad Hoc Committees:
Created for specific purposes and cease to exist after task completion. E.g. Select and Joint committees

Departmentally Related Standing Committees (DRSCs)

24 DRCs are covering under their jurisdiction **all the Ministries/Departments** of the Government of India.

- **8** Committees Serviced by **Rajya Sabha** Secretariat
- **16** Committees Serviced by **Lok Sabha** Secretariat

Total: 31 Members

LS: 21 Members
RS: 10 Members

Functions

Function 1

DRSCs review fund allocations for government departments and ministries.

Function 2

DRSCs examine bills referred by Lok Sabha or Rajya Sabha presiding officers.

Function 3

DRSCs review **annual reports** of ministries and departments under their purview.

Estimates Committee vs Public Accounts Committee vs Committee on Public Undertakings

Estimates Committee	Public Accounts Committee	Committee on Public Undertakings
It assesses potential economies, organisational improvements, and reforms.	It examines fund appropriation, financial statements, and focuses on policy implementation and outcomes, **does not address policy issues.**	It oversees the management and finances of Public Undertakings but **does not examine** major policies or daily administration.
Members: 30 (Lok Sabha)	**Members:** 22 (15 LS + 7RS)	**Members:** 22 (15 LS + 7RS)
Tenure: 1 Year	**Tenure: 1 Year**	**Tenure: 1 Year**
Elected by The Two House(s)	Elected by the Two House(s)	Elected by the Two House(s)
A Minister is not eligible for election to this committee.	A Minister is not eligible for election to this committee.	A Minister is not eligible for election to this committee.

- Supreme Court rulings clarify that wilful misconduct, corruption, lack of integrity, or offenses involving moral turpitude are grounds for misbehaviour.
- Incapacity refers to a medical condition, either physical or mental.

Procedure for Removal

- **Procedure for Removal:** A judge can be removed only by an order of the President, based on a motion passed by both Houses of Parliament.
  - The Judges Inquiry Act, 1968, outlines the removal procedure.
    - A motion may be introduced in either House of Parliament.
    - In the Lok Sabha, at least 100 members must sign the notice.
    - In the Rajya Sabha, at least 50 members must sign the notice.
    - The Speaker (Lok Sabha) or Chairman (Rajya Sabha) may consult relevant individuals and decide whether to admit the motion.
- **Motion Admission:** The Speaker (Lok Sabha) or Chairman (Rajya Sabha) decides whether to admit the motion after due consideration and consultation.
- **Three-Member Committee:** If the motion is admitted, a three-member committee is formed: A Supreme Court/High Court judge, A distinguished jurist, and A member of the judiciary.
- **Investigation and Report:** The committee investigates the case.
  - If the judge is cleared of misbehaviour or incapacity, the motion is dropped.
  - If guilty, the committee report is presented in Parliament for further action.
- **Parliament's Role:** If the committee finds misbehaviour or incapacity, the motion is debated in Parliament.
  - A motion for removal must be passed by both Houses of Parliament.
  - ***The motion requires:*** A majority of the total membership of each House and a special majority of at least two-thirds of members present and voting in the same session.
- **Sending the Motion to the President:** Once adopted by both Houses, the motion is sent to the President.
  - The President will issue an order for the judge's removal.

NATIONAL COMMISSION FOR SAFAI KARAMCHARIS (NCSK)

Context

The Union Cabinet has approved the extension of the NCSK tenure until March 31, 2028, with a financial implication of around Rs 51 crore.

About

- It was established on 12th August 1994 under the National Commission for Safai Karamcharis Act, 1993, initially for a period of 3 years as a **statutory body**.
- The Act was extended until 2004, after which the Commission became a **non-statutory body** under the **Ministry of Social Justice and Empowerment.**
  - The Commission takes **suo-motu notice** of issues affecting Safai Karamcharis based on media reports or observations.
- **Composition** : The Commission consists of a **Chairperson (Union Minister of State rank), a Vice-Chairperson (Secretary rank), five members** (including one woman member), and a Secretary (Joint Secretary rank).
- **Mandate of the Commission:** Recommend programs for the elimination of inequalities for Safai Karamcharis (sanitation workers).
  - Evaluate and study social and economic rehabilitation programs for Safai Karamcharis and scavengers.
  - Monitor working conditions (health, safety, wages) of Safai Karamcharis employed by various employers, including government bodies.
  - **Expanded Mandate (Post-2013):** Following the enactment of "The Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013", the Commission's scope expanded to Monitor implementation of the Act.
    - Take suo-motu notice of non-implementation of the Act.
- **Supreme Court Judgment (2023):** The Commission monitors the implementation of Supreme Court directives to eliminate manual scavenging.
  - Directive involves the compensation, rehabilitation measures and establishment of accountability mechanisms related to manual scavenging.

ARTICLE 101(4)

Context

Amritpal, facing charges under the stringent National Security Act, could lose his MP seat under Article 101(4).

About

- **Article 101(4) of the Indian Constitution** deals with the disqualification of a Member of Parliament (MP) due to their absence from the sessions of Parliament.
- **Disqualification for Absence:** MPs can be disqualified if they are absent from all meetings of either the Lok Sabha (House of the People) or Rajya Sabha (Council of States) for a period of 60 days without seeking permission from the House.
  - Effectively, the period of absence is only calculated based on the actual sittings of Parliament.

- **Permission:** The absence must be without permission from the respective House of Parliament. If the MP obtains permission, the disqualification does not apply.
- **This provision ensures** that MPs actively participate in legislative proceedings and remain accountable to the people they represent.

Key Provisions of the National Security Act (NSA), 1980

Provision	Details
Purpose	Allows preventive detention to maintain public order, national security, and essential services.
Authority	Central and state governments can detain individuals if they pose a threat to national security or public order.
Maximum Detention Period	Up to 12 months, extendable if fresh evidence arises.
No FIR or Charges	A person can be detained without an FIR, trial, or formal charges.
Review Board	A three-member Advisory Board, headed by a High Court judge, reviews cases within 3 months of detention.
No Right to Legal Aid	Detainees cannot hire a lawyer to challenge detention before the Advisory Board.
Grounds for Detention	Includes threats to defense, foreign relations, public order, or essential services.
State Government Powers	Can detain individuals for up to 12 days without Central approval.
Confidential Grounds	Authorities are not obligated to disclose full reasons for detention if deemed against public interest.

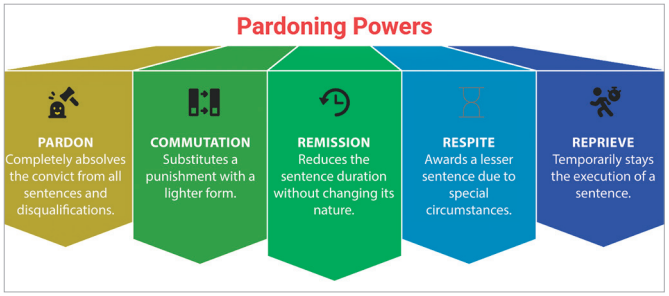
SC DIRECTIONS ON REMISSION

Context

The Supreme Court directed states with remission policies to automatically consider the premature release of eligible prisoners, even if they have not applied for remission. This ruling applies to all prisoners, except those convicted of serious offenses.

About Remission

- Remission refers to reducing the sentence of a convicted person.
  - **Article 72 gives the President** the power to grant pardons, reprieves, respites, remissions, or commute sentences, including death penalties and military court cases.
  - **Article 161 gives the Governor** similar powers but only for state law offenses, excluding death sentences.
- **Section 473 of the Bharatiya Nagarik Suraksha Sanhita, 2023** gives states the power to remit sentences at any time, with conditions such as regular reporting to police officers.
  - Life-sentence convicts cannot be released before serving at least 14 years in prison.



Supreme Court Judgment on Remission Policy

- **States' Obligation:** If a state has a **remission policy**, it must automatically consider eligible cases without requiring convicts to apply.
- **Directive to States & UTs:** States and Union Territories **without a remission policy** under **CrPC Section 432** or **BNSS Section 473** must **formulate one within two months**.
- **Non-Discriminatory Approach:** Denying remission consideration unless a convict applies **violates Article 14** (Right to Equality).
- **Fair Use of Power:** The government must exercise remission powers **fairly, reasonably, and without bias**.
- **Conditions for Remission:** It Should aid in the **rehabilitation** of the convict.
  - It must not be **overly restrictive, arbitrary, or vague**.
  - It should be **practical, well-defined, and enforceable**.
- **Communication of Decisions:**Orders **granting or rejecting remission** must include **clear and brief reasons**. Decisions must be **immediately communicated** to the convict and relevant legal authorities. Convicts must be **informed of their right to challenge a rejection**.
- **Protection of Granted Remission:**Remission **cannot be revoked** without a **fair hearing**.
  - Any **cancellation order** must provide **valid and justifiable reasons.**

SHAKTIKANTA DAS APPOINTED AS NEW PRINCIPAL SECRETARY

Context

Former Reserve Bank of India (RBI) Governor Shaktikanta Das was appointed as the Principal Secretary to the Prime Minister.

Comparison between different types of Secretaries			
Position	**Level**	**Role & Responsibilities**	**Reports To**
Cabinet Secretary	Highest-ranking bureaucrat in India	Acts as the chief coordinator among ministries, ensures implementation of Cabinet decisions, and advises the PM. He also heads the Civil Services Board.	Prime Minister of India
Principal Secretary	Senior bureaucrat in a ministry/department (Central or State Govt.)	Advises on policy, administration, and implementation within a specific department. Note: The Principal Secretary is the administrative head of the Prime Minister's Office (PMO) and is considered the most important aide to the PM.	PM, or Union Minister (Central Govt.), CM (State Govt).
Chief Secretary	Topmost bureaucrat in a state	Heads the State Secretariat, coordinates state administration, and advises the CM	Chief Minister of the State

DELIMITATION AND CONCERNS OF SOUTHERN STATES

Context

The Union Home Minister reassured that the upcoming delimitation would be fair and ensure that southern states receive an equitable share of any increase in parliamentary seats.

About Delimitation:

- Delimitation is the process of **redrawing the boundaries of parliamentary and legislative assembly constituencies** to reflect changes in population. It aims to:
  - Ensure fair representation based on demographic shifts.
  - Adjust the number of seats allocated to different states.
  - Determine reservations for Scheduled Castes (SC) and Scheduled Tribes (ST).
- This system was designed to balance population growth with political representation and uphold the democratic principle of **"one citizen, one vote, one value."**
- **Constitutional Provisions:**
  - **Article 82:** After every Census, Parliament enacts a Delimitation Act to redefine constituency boundaries.
  - **Article 170:** The total number of seats in state assemblies is adjusted according to the Delimitation Act after each Census.

Delimitation Commission:

- **Authority:** Constituted by the **President of India** under the **Delimitation Act**.
- **Composition (3-Member Body):**
  - **Chairperson:** Retired **Supreme Court Judge**
  - **Ex-officio Member: Chief Election Commissioner of India**
  - **Ex-officio Members: State Election Commissioners** of the respective states concerned
- **Powers:** Functions as a **civil court**, and its decisions **cannot be challenged in court**.
- **Past Commissions:** Established four times – 1952, 1963, 1973, and 2002.
- **Objective:** Ensures **equal representation** by maintaining a **consistent population-to-seat ratio** across constituencies and states.

Concerns of Southern States:

- **Reduced Representation:** States like **Kerala and Tamil Nadu** may receive **fewer seats** due to **lower population growth**, while northern states may gain more seats.
- **Financial Disparity:** More seats in the north could lead to a **greater share of central funds**, increasing the financial burden on the south.
- **Demographic Disadvantage:** Southern states, despite **effective population control**, may face reduced political influence.
- **Regionalism & Unity:** A rise in **northern representation** could trigger demands for **greater autonomy** in southern states, impacting national integration.

CORRUPTION PERCEPTIONS INDEX, 2024

Context

India ranked 96 out of 180 countries in the Corruption Perceptions Index (CPI) for 2024.

About

- The **Corruption Perceptions Index (CPI) 2024** highlights how corruption is hindering **global efforts to combat climate change.**
- It uses a **scale of zero to 100,** where "zero" is highly corrupt and "100" is very clean.
- The report has been compiled by **Transparency International.**
- Corruption is an evolving global threat that does far more than undermine development – it is a key cause of **declining democracy, instability and human rights violations.**

Key Findings

- 85% of the world's population lives in countries with **CPI scores below 50.**
- India scored 38 out of 100, dropping one point from 2023, and ranked 96th.
- **Least Corrupt Countries:** Denmark, Finland, Singapore.
- **Most Corrupt Countries:** South Sudan, Somalia, Venezuela.

RASHTRIYA KARMAYOGI JAN SEVA PROGRAM

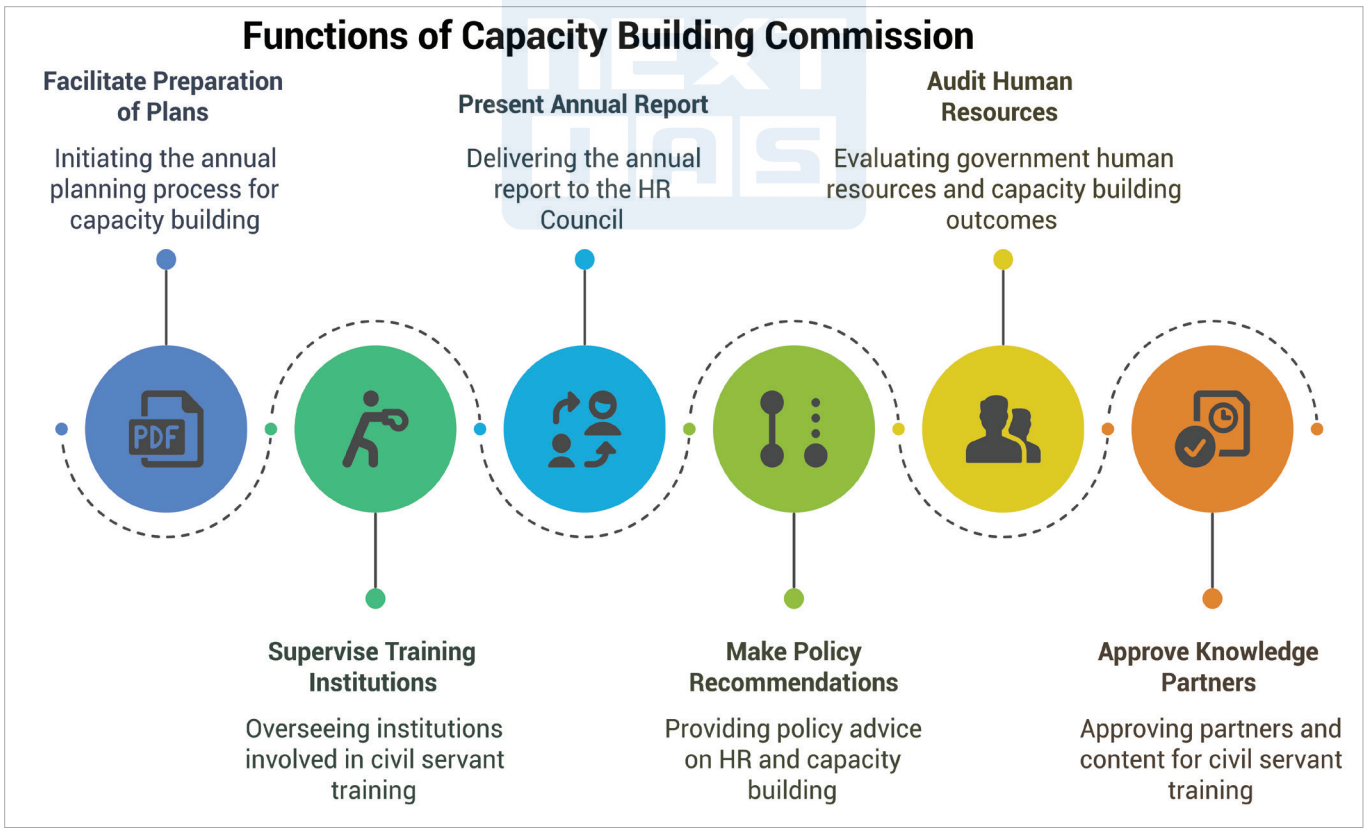
Context

The Department of Administrative Reforms & Public Grievances (DARPG), in collaboration with the Capacity Building Commission, organized an interactive and engaging training program under the "Rashtriya Karmayogi Jan Seva Program".

About Capacity Building Commission:

- The **Capacity Building Commission (CBC)** is an independent body with full executive authority.
- It consists of **three members**, supported by an internal **Secretariat** led by a **Secretary**.
- Members come from **diverse backgrounds**, including the **private sector, academia, public sector, and civil society**.
- The Commission focuses on **standardizing and improving learning and development** in the public sector.
- Operational since April 2021.

Rashtriya Karmayogi Jan Seva Program	
Aim	➲ Enhance skills of officers (Assistant Section Officer to Director / Deputy Secretary levels) ➲ Promote excellence in public service with efficiency, accountability, and transparency
Organized By	➲ Department of Administrative Reforms & Public Grievances (DARPG) and Capacity Building Commission
Nodal Ministry	➲ Ministry of Personnel, Public Grievances & Pensions



2 INTERNATIONAL RELATIONS

US WITHDRAWAL FROM UNHRC, WHO, AND OTHER INTERNATIONAL FORUMS

Context

The United States has recently announced its withdrawal from several key international organizations, including the UNHRC, the WHO, and other international forums.

Key Instances of U.S. Withdrawal from International Forums:

- **United Nations Human Rights Council (UNHRC):** US cited the **UNHRC's 'chronic bias against Israel'** and its failure to address genuine human rights concerns.
  - It was part of a broader pattern of the Trump administration stepping back from international agreements and organizations under its **'America First'** policy.
  - It accused the UNHRC of **'obsessively demonizing the one democracy in the Middle East'** and propagating **antisemitism**.
  - The US prohibits **any future funding** for the **United Nations Relief and Works Agency (UNRWA)**, which provides aid to millions of Palestinians.
  - It is important to note that the **UNHRC has passed over 100 condemnatory resolutions against Israel,** which **amounts to more than 20% of all resolutions passed by the council**.
- **World Health Organization (WHO)**: Reasons behind withdrawal are WHO's **handling of the COVID-19 pandemic** and its **perceived bias towards China.**
  - The **US, being the largest financial contributor to the WHO**, argued that the organization needed to be reformed to better serve its member states.
  - It could cost WHO $130 million in annual funds and hinder global public health response.

Other International Forums

- The US has **reviewed its involvement** in other international organizations, such as **UNESCO and the Paris Climate Accord**, citing **'wild disparities'** in financial contributions among member countries.
  - Earlier, US left **UNESCO in 2017**, citing an alleged anti-Israel bias within the organization. It echoed **a similar withdrawal in 1984** under President Ronald Reagan, which was reversed in 2003.
- The US withdrew from **the Trans-Pacific Partnership (TPP)** in 2017, citing the **need to protect American jobs and industries.**
  - The remaining countries proceeded with a **revised version** called the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).**

Implications of U.S. Withdrawal from International Forums:

- **Weakening of Global Multilateralism:** The **repeated exits** from key international organizations have raised concerns about the effectiveness of multilateralism. U.S. disengagement often **leads to leadership vacuums** that other nations, particularly China, have sought to fill.
- **Geopolitical Power Shifts:** China and Russia have leveraged U.S. withdrawals to strengthen their influence in global governance.
  - *For instance*, **China has expanded its role** within WHO, UNHRC, and trade agreements following US exits.
- **Damage to Global Trust and Alliances:** Frequent policy reversals, such as the **U.S. leaving and then rejoining** international agreements (e.g., Paris Climate Accord, WHO, and UNESCO), create uncertainty among allies and undermine trust in American commitments.
- **Impact on Global Trade and Climate Policies:** Withdrawal from agreements like the **TPP and the Paris Climate Accord** has had economic and environmental consequences.
  - The U.S. lost trade opportunities while other nations advanced regional agreements without it.
- **Impact on UNRWA:** UNRWA provides health, education, and aid services to millions of Palestinians in Gaza, the West Bank, Syria, Lebanon, and Jordan.
  - The US had been the largest donor to UNRWA, contributing between $300 million and $400 million annually.

Reforms Needed in International Forums Amid US Withdrawal

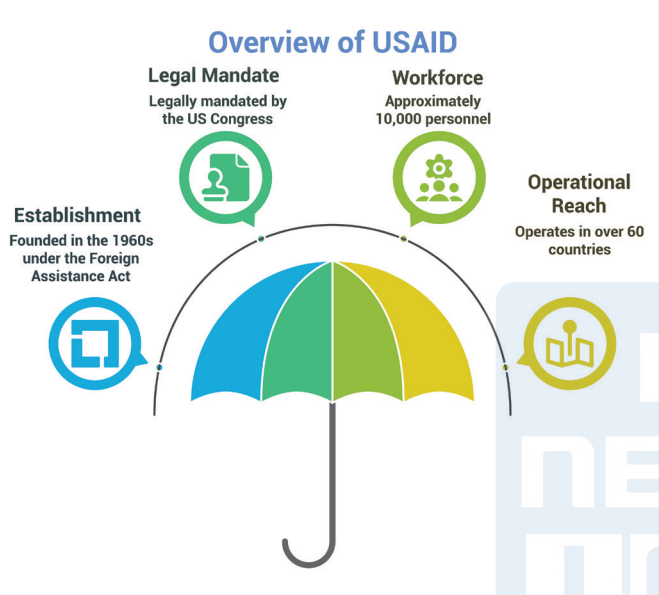
- **Strengthening Multilateralism:** Organizations like WHO, WTO, and UN bodies suffer from funding shortfalls when major contributors (like the US) withdraw.
  - Reforming financial structures—such as mandatory contributions from all members—can reduce dependency on a few nations.
- **Expanding Representation in Global Decision-Making**: Calls for expanding permanent UNSC membership (that remain dominated by post-WWII power structures) to include emerging powers like India, Brazil, and South Africa.
- **Revitalizing Climate Agreements:** Strengthening compliance mechanisms and creating penalties for withdrawal could ensure sustained participation.

UNITED STATES AGENCY OF INTERNATIONAL DEVELOPMENT (USAID)

Context

The US President Donald Trump has imposed a 90-day freeze on foreign aid, temporarily halting US Agency for International Development programs worldwide.

About



Key Areas of Focus:

- **Food Security:** Provides famine relief and manages an advanced food shortage prediction system.
- **Healthcare:** Funds vaccination programs, pandemic prevention, and global disease control efforts.
- **Infrastructure & Development:** Supports clean water initiatives, disaster relief, and economic development programs.
- **Humanitarian Aid:** Plays a critical role in war-affected regions, including Ukraine and sub-Saharan Africa.

USAID and India

- India's association with USAID began in **1951** with the **India Emergency Food Aid Act**, later evolving into **infrastructure development, capacity building, and economic reforms**.
- USAID has supported initiatives in **education, immunization, polio eradication, and HIV/TB prevention**.
- Over the past decade, India has received approximately **$1.5 billion** from USAID, accounting for **0.2% to 0.4%** of its total global funding.

USAID Projects in India (2023-24) – Finance Ministry Report

- USAID implemented **seven projects** in India in partnership with the **central government**.
- **No projects were related to voter turnout**, contradicting **US President Donald Trump's** claims of election interference.
- The projects, worth approximately **$750 million**, focused on:
  - Agriculture & Food Security
  - Water & Sanitation
  - Renewable Energy
  - Disaster Management
  - Healthcare

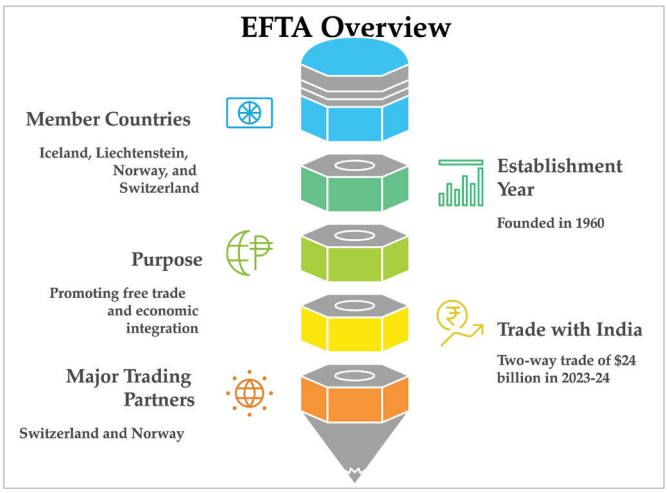
INDIA-EFTA DESK

Context

India and the European Free Trade Association (EFTA) have taken a significant step towards deeper economic collaboration with the inauguration of the India-EFTA Desk.

About

- This initiative follows the recently concluded **India-EFTA Trade and Economic Partnership Agreement (TEPA),** making EFTA the **first European bloc to formalize a trade pact with India.**
  - India has received an investment commitment of $100 billion in 15 years from the EFTA, allowing several products such as Swiss watches, chocolates and cut and polished diamonds at lower or zero duties.
- **India-EFTA Desk** will serve as the **bridge between businesses on both sides,** promoting ease of doing business.
  - It will support EFTA businesses looking to invest, expand, or establish operations in India.
  - It will drive investment in renewable energy, life sciences, engineering, and digital transformation.



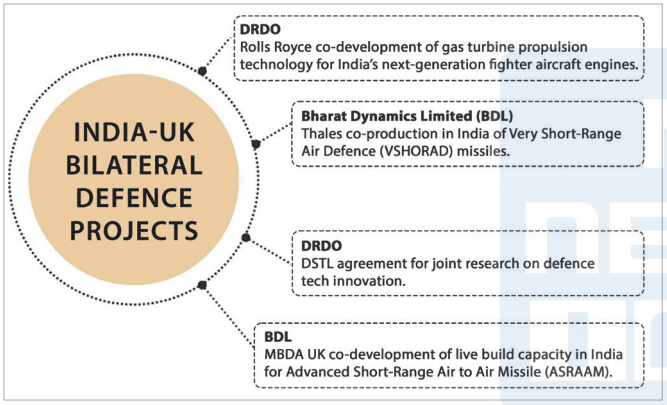
INDIA-UK DEFENCE COLLABORATION

Context

India and the United Kingdom have signed multiple agreements aimed at enhancing bilateral defence collaboration.

Key Agreements Signed:

- **Defence Partnership–India (DP-I):** Establishment of a **dedicated programme office** within the UK's Ministry of Defence to serve as a **one-stop hub for bilateral defence collaboration**.
  - Aims to **facilitate deeper cooperation** and support **economic growth** in both countries.
- **Laser Beam Riding MANPADs (LBRM):** India and the UK signed a contract for the delivery of **Laser Beam Riding Man Portable Air Defence Systems (MANPADS).**



  - The initial supply of **High Velocity Missiles (STARStreak) and launchers** is set for delivery this year.
- **Lightweight Multirole Missiles (LMM):** Focuses on **integrating Indian and British industries** into the **global defence supply chain**.
- **Advanced Short-Range Air-to-Air Missile (ASRAAM):** Collaboration to establish an **ASRAAM assembly and testing facility in Hyderabad**.
- **Integrated Full Electric Propulsion (IFEP) System:** A **Statement of Intent** was signed to **design and develop an Integrated Full Electric Propulsion (IFEP) system** for India's **next-generation Landing Platform Dock (LPD) fleet**.
  - Both nations are working to establish **India's first maritime Land-Based Testing Facility**, with a goal to deliver the **LPD in water by 2030.**

Significance

- **Strategic Partnership:** India and the UK have strengthened their **Comprehensive Strategic Partnership**, enhancing bilateral defense cooperation, joint military exercises, and intelligence sharing to address common security threats.
- Defence Trade and Technology Collaboration**:** The UK is a key defense supplier, providing India with **advanced military hardware, technology transfers, and co-development projects**, including naval, air, and cyber capabilities under the **India-UK Defence and International Security Partnership.**
- **Joint Military Exercises:** Regular joint exercises enhance interoperability, tactical coordination, and military-to-military ties between the two nations.
- **Maritime Security and Indo-Pacific Cooperation:** The UK supports India's role in ensuring **free and open Indo-Pacific waters**, collaborating on maritime security, anti-piracy operations, and deploying UK warships in the region.
- **Counterterrorism and Cybersecurity:** Both nations work closely on **intelligence sharing, counterterrorism efforts, and cybersecurity collaborations**, addressing global security challenges, including terrorism financing and online radicalization.
- **Geopolitical Alignment:** With shared democratic values and concerns over regional security, India and the UK cooperate in multilateral forums like the **United Nations, Commonwealth, and G7**, strengthening global defense diplomacy.

Defense Cooperation Between India and UK

- Over the past decade, only about 3% of India's defence acquisitions came from the UK.
- **Modern Collaborative Frameworks:**
  - **Defense and International Security Partnership (DISP), 2015:** It aims to enhance cooperation in areas such as counter-terrorism, cyber security, and defense manufacturing.
  - **Defense Equipment Memorandum of Understanding (MoU):** It facilitates collaboration between defense industries of both countries, promoting co-development and co-production initiatives.
  - India-UK 2+2 Foreign and Defence Dialogue.
- **Joint Military Exercises and Training:**
  - Exercise Ajeya Warrior;
  - Exercise Konkan;
  - Exercise Cobra Warrior;
  - Exercise Tarang Shakti.
- **Defense Industrial Collaboration:** A Letter of Arrangement was signed between India's DRDO and the UK's DSTL to collaborate on defense research, emphasizing areas like **Electric Propulsion Systems for the Indian Navy.**
- **Maritime Cooperation:** Promoting freedom of navigation and open access, and improving maritime cooperation, with a new **Maritime Dialogue, Grey and Dark Shipping** information sharing and mechanisms.

3 ECONOMY

KISAN CREDIT CARD INTEREST SUBVENTION SCHEME

Context

Recently, the loan limit under the Kisan Credit Card (KCC) scheme has been raised from ₹3 lakh to ₹5 lakh under the Modified Interest Subvention (MIS) Scheme, marking a significant move to improve financial access for farmers.

About

- **Introduction**
  - Launched in **1998** by the **National Bank for Agriculture and Rural Development (NABARD)** to ensure **uniform credit access** across different banks.
  - Initially aimed at **short-term credit for farmers**, it was later expanded to include **investment credit** for allied and non-farm activities.
- **Expansion and Modernization**
  - **2004**: Extended to support **dairy farming, poultry, fisheries, sericulture, and beekeeping**.
  - **2012**: Based on the **T.M. Bhasin Committee** recommendations, the scheme was simplified, and **Electronic Kisan Credit Cards (e-KCC)** were introduced for **seamless digital transactions**.
- **Key Objectives**
  - **Short-term credit** for **cultivation of crops**.
  - **Post-harvest expenses**, including **storage, processing, and transportation** of agricultural produce.
  - **Marketing loans** to help farmers sell crops at **favorable prices**.
  - **Household consumption needs** of farming families.
- **Applicability and Coverage:** Available through Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks, and Cooperative Banks.
- **Eligibility Criteria:**
  - Individual or joint borrowers who are owner-cultivators.
  - Tenant farmers, oral lessees, and sharecroppers.
  - Self-Help Groups (SHGs) and Joint Liability Groups (JLGs) of tenant farmers and sharecroppers.

GREEN CARDAMOM

Context

Recently, an international team of researchers identified six species closely related to Elettaria cardamomum, commonly known as green cardamom.

About

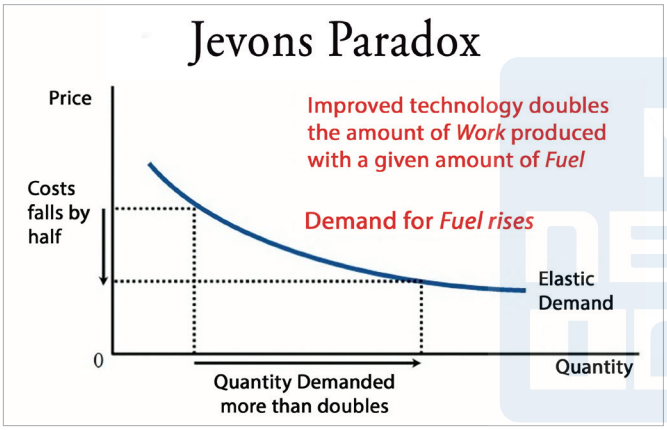
- **Overview**
  - Cardamom belongs to the **Zingiberaceae family**, which also includes ginger and turmeric.
  - It is **one of the most valuable spices globally**, used in culinary, medicinal, and aromatic applications.
  - Known as the **"Queen of Spices"**, it is native to the **evergreen rainforests of the Western Ghats in South India**.
  - **Major producing states in India** include **Kerala, Karnataka, and Tamil Nadu**, with Kerala being the largest producer.
- **Climatic and Soil Requirements for Growth**
  - **Soil:** Prefers **forest loamy soils**, rich in organic matter and **acidic in nature**, with a **pH range of 5.0 – 6.5**.
  - **Elevation:** Best suited for cultivation at an altitude between **600 to 1500 meters** above sea level.
  - **Temperature:** Thrives in a temperature range of **10°C to 35°C**, making it ideal for tropical and subtropical climates.
  - **Rainfall:** Requires **1500 to 4000 mm** of annual rainfall, with **well-distributed precipitation** throughout the year.
  - **Soil Nutrients:** Grows best in **humus-rich soils**, particularly with **low to medium available phosphorus** and **medium to high available potassium**, which help in plant development and yield improvement.
- **Uses and Importance**
  - ***Culinary Uses:***
    - A **widely used spice** in Indian, Middle Eastern, and Scandinavian cuisines.
    - Adds **aroma and flavor** to dishes like biryanis, desserts, and beverages (e.g., chai, coffee, and herbal teas).
  - ***Medicinal Uses:***
    - Used in **Ayurveda and traditional medicine** for treating **digestive disorders, respiratory issues, and infections**.
    - Known for its **anti-inflammatory, antioxidant, and antimicrobial properties**.
    - Helps in **detoxifying the body, improving metabolism, and reducing blood pressure**.
  - ***Industrial Uses:***
    - An important ingredient in **essential oils and perfumes** due to its aromatic compounds.
    - Used in the **pharmaceutical industry** for making herbal formulations.
- **Newly Identified Cardamom Species**
  - ***Newly Identified Species:***
    - **E. facifera** – Discovered in **Periyar Tiger Reserve, Kerala**.
    - **E. tulipifera** – Found in **Agasthyamalai hills, Kerala**.

- ***Reclassified Species:***
  - **E. ensal, E. floribunda, E. involucrata, and E. rufescens** were earlier classified under **Alpinia** but are now included under **Elettaria**.
- The seed **capsules of Elettaria cardamomum** provide the **commercially valuable green cardamom**, used globally for its **flavor and medicinal properties**.

JEVONS PARADOX

Context

Recently, Microsoft CEO Satya Nadella referenced the Jevons Paradox in the context of AI, emphasizing that greater efficiency and accessibility could drive a surge in demand.



About

➲ **Concept Overview**

- **Jevons Paradox** refers to the idea that **technological advancements** that make a resource **cheaper or more efficient to use** often lead to an **increase in demand** for that resource rather than a reduction in its consumption.
- This phenomenon is a form of **induced demand**, where **efficiency improvements lead to greater overall usage** instead of conservation.
- As a result, technological progress **does not always lead to resource savings** but may instead **accelerate resource depletion**.

➲ **Origin of Jevons Paradox**

- The concept was first proposed by **English economist William Stanley Jevons** in his **1865 book, The Coal Question**.
- Jevons observed that **technological advancements** in coal-powered steam engines **improved efficiency**, reducing the amount of coal required per unit of output.
- However, instead of conserving coal reserves, the increased efficiency **led to greater demand for coal**, as it became more economically viable for industries to expand.
- This insight demonstrated that **technological progress enables people to satisfy previously unmet demands**, leading to higher overall consumption.

➲ **Examples of Jevons Paradox**

- ***Fuel Efficiency and Vehicle Usage***
  - When vehicles become **more fuel-efficient**, the cost of driving per mile **decreases**.
  - This makes driving **more affordable**, encouraging people to **drive longer distances or use their vehicles more frequently**.
  - As a result, **total fuel consumption may increase**, offsetting the energy conservation benefits of improved fuel efficiency.
- ***Energy Efficiency and Consumption***
  - The development of **energy-efficient technologies** often leads to an **increase in overall energy consumption** rather than a decrease.
  - Example: The introduction of **LED bulbs**, which consume less electricity than traditional incandescent bulbs, has made lighting **cheaper and more accessible**.
  - Instead of reducing energy usage, people and businesses **install more lights or leave them on for longer periods**, leading to **higher overall energy consumption**.
- ***Digital Technology and Energy Consumption***
  - The rise of **digital technology and the internet** has led to **greater energy efficiency** in communication, storage, and processing.
  - However, the proliferation of **smart devices, data centers, and cloud computing** has **significantly increased overall energy demand**.
  - While individual devices are more efficient, the **expansion of digital services** results in **higher total energy consumption** globally.

BEGGAR-THY-NEIGHBOUR POLICIES

Context

Recently, the concept of beggar-thy-neighbour policies has gained attention due to the increasing adoption of protectionist measures by major economies.

About

➲ **Concept Overview**

- **Beggar-thy-neighbor policies** refer to **protectionist measures** that **benefit one country's economy at the expense of others**.
- These policies often include **trade restrictions and currency devaluations** aimed at **boosting domestic industries** while harming international competitors.

- They can **trigger retaliatory actions** from other countries, leading to **trade wars** and **economic instability**.

➲ **Common Examples**

- ***Trade Wars***
  - **Imposing tariffs and quotas** on foreign goods makes imports more expensive, protecting domestic industries.
  - However, this **reduces market access for foreign exporters**, leading to **retaliatory tariffs** and escalating tensions.
- ***Currency Wars***
  - **Depreciating a country's currency** makes its exports **cheaper** in the global market, boosting demand for domestic goods.
  - At the same time, imports become **more expensive**, discouraging foreign purchases and leading to a **trade surplus**.
  - However, this practice can trigger **competitive devaluations**, leading to global economic instability.

➲ **Origins of the Term**

- The term **beggar-thy-neighbor** was coined by **Adam Smith** in his 1776 book, *The Wealth of Nations*.
- Smith **criticized mercantilist policies**, which focused on **protectionism and wealth accumulation** at the cost of trade partners.
- He argued that **free trade** fosters economic growth for all nations, rather than benefiting one at the expense of others.

➲ **Arguments in Favor**

- **Industrial Protection**: Shields domestic industries from foreign competition, preventing job losses.
- **Trade Surplus**: Export-driven policies boost domestic production and economic growth.
- **National Security**: Certain industries (e.g., defense, energy) may require protection for strategic reasons.

➲ **Arguments Against**

- **Global Economic Instability**: Protectionist policies can **trigger retaliation**, leading to **trade wars** and economic downturns.
- **Higher Consumer Prices**: Reduced foreign competition **increases costs for consumers**, as domestic firms face less pressure to lower prices.
- **Historical Precedents**: The **Great Depression** (1920s–1930s) was **worsened by retaliatory tariffs and competitive devaluations**.

➲ **Recent Examples & Concerns**

- **China and Japan** have been **accused of currency devaluation** to make their exports cheaper.
- **U.S. Tariffs on China** (Trump-era trade policies) were designed to **protect American industries**, but they **raised consumer prices** in the U.S. and **led to retaliatory tariffs**.
- **Rise of Populism**: Growing **economic nationalism** in many countries has led to concerns about **renewed protectionism**, threatening global trade stability.

GROSS DOMESTIC KNOWLEDGE PRODUCT (GDKP) TO MEASURE KNOWLEDGE ECONOMY

Context

Recently, the government announced plans to develop a framework for systematically assessing the impact of knowledge on the country's economic and social life.

About

➲ The concept of GDKP was first propounded by **Prof. Umberto Sulpasso of the University of Southern California along with Prof. Jeff Cole**.

➲ It is a proposed metric designed to measure the knowledge generated and utilized within an economy and serve as a supplementary indicator to GDP.

➲ GDKP evaluates a nation's growth and future using **four fundamental pillars:**

- **Knowledge Items (Ki):** Identifying modern and traditional cultural knowledge that contributes to the country's intellectual capital.
- **Country's Knowledge Producing Matrix (CKPM):** Analyzing knowledge produced by government institutions, private organizations, and households.
- **Country's Knowledge User Matrix (CKUM):** Measuring the value of knowledge purchased by individuals and private entities, reflecting its demand and practical application.
- **Cost of Learning:** Similar to the cost of living, this metric is proposed as a political reference point for government budget allocations and policy decisions.

➲ **Challenges in Implementing GDKP**

- **Integration with GDP**: The **concept paper** proposed GDKP as a **supplementary indicator** to GDP but did not specify **how it would enhance welfare measurement**.
- **Data Availability Issues**:
  - **Limited availability** of direct data for measuring GDKP.
  - Might require **perception-based surveys** to estimate knowledge-based economic contributions.
- **Overlap with GDP:**
  - Some **components of GDKP are already captured** in the existing GDP framework.
  - A **proper methodology** is needed to **avoid duplication** and effectively integrate GDKP with GDP.

SOVEREIGN GREEN BONDS

Context

Recently, like many emerging markets, India turned to sovereign green bonds to finance its transition to a low-carbon economy, but investor demand remains subdued.

About

- **Green Bonds:**
  - **Definition:** Debt instruments issued to raise funds for **emission reduction** or **climate resilience projects**.
  - **Issuers:** Governments, corporations, and **multilateral banks**.
  - **Yields:** Typically **lower than conventional bonds**, as funds are used exclusively for **green investments**.
- **Greenium (Green Premium):**
  - **Definition:** The **difference in yield** between green bonds and conventional bonds.
  - **Significance:** A **higher greenium** reduces fundraising costs and makes **green investments more appealing**.
- **Sovereign Green Bonds (SGrBs):**
  - **Issuer: Sovereign entities**, like the **Government of India**.
  - **Framework (2022):** Defines **green projects** as initiatives that:
    - Enhance **energy efficiency**.
    - Reduce **carbon emissions**.
    - Promote **climate resilience**.
    - Improve **natural ecosystems**.
- **Issuance and Fundraising:**
  - Since **2022-23**, India has issued **SGrBs eight times**, raising nearly **Rs 53,000 crore**.
  - Despite the effort, **SGrBs have struggled to gain traction** due to **muted investor demand** and difficulty in securing a **greenium**.

INDIA'S SINGLE LARGEST SOLAR CELL MAKING UNIT

Context

Recently, the Chief Minister of Tamil Nadu inaugurated India's largest solar cell and module manufacturing unit at the Gangaikondan SIPCOT Industrial Growth Centre.

About

- **Overview**
  - Established by **TATA Power's solar energy arm, TP Solar Limited**, to boost India's solar manufacturing capacity.
  - **Investment**: ₹ 3,800 crore.
  - Designed to **produce 30 GW of photovoltaic (PV) cells and modules annually** for solar power generation across India.
- **Technological Advancements**
  - **Advanced robotic automation** enhances efficiency in production.
  - Equipped with **TOPCon (Tunnel Oxide Passivated Contact) and Mono PERC (Monocrystalline Passivated Emitter and Rear Contact) technology**, ensuring:
    - **Higher efficiency** in solar energy conversion.
    - **Long-term reliability** for solar projects, including rooftop solar installations.
  - The unit will **not only manufacture solar modules** but also **produce key raw materials** required for their production.

Additional Information

- **Solar Cells**
  - **Basic unit** of a solar panel, converting sunlight into electricity through the **photovoltaic effect**.
  - When sunlight hits the cell, **electrons are excited**, generating an electric current.
  - **Materials used**: Mainly **silicon**, with newer technologies like **TOPCon** and **Mono PERC** improving efficiency.
- **Solar Modules (Panels)**
  - **Multiple solar cells** connected together form a **solar module** (or panel).
  - These modules are **encapsulated in a durable frame** with glass protection against environmental factors.
  - Serve as the **core components of solar power systems**, enabling large-scale electricity generation.

RURAL INDIANS SUFFER FROM A 'HIDDEN HUNGER'

Context

Recently, a study by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) revealed that many rural Indians suffer from protein deficiency despite producing or affording protein-rich foods.

Major Findings:

- **More than two-thirds of households** surveyed across India's semi-arid tropics consume less protein than recommended despite sufficient availability of protein sources.
- **Consumptions of Staples:** Regions rely heavily on staple grains like rice and wheat, which contribute 60–75% of daily protein intake.
- **Underutilization of Protein-rich foods**: Foods such as pulses, dairy, eggs, and meat remain underutilized, not necessarily because they are scarce, but due to a mix of cultural food preferences, limited nutritional awareness, and financial constraints.
- **Deficiency in Wealthier Families:** Even wealthier families, who can afford diverse diets, often fail to meet recommended protein intake levels.
- **Households where women had higher levels of education** were more likely to consume a balanced diet.
- **PDS System:** India's Public Distribution System (PDS), has been successful in improving calorie intake.

- However, it has inadvertently reinforced a diet dominated by cereals while failing to provide sufficient protein-rich options.

➲ **Reasons for the Dietary Habits:**
- deeply ingrained dietary habits,
- lack of understanding about the importance of protein-rich foods,
- financial constraints.

Recommendations

➲ Increasing the inclusion of pulses, millets, and other protein-dense foods in government food programs to significantly improve nutritional outcomes.
➲ Region-specific strategies would be needed to promote balanced nutritional intake.
➲ Integrating nutrition education into public health programmes and school curricula.
➲ Encouraging farmers to grow a wider variety of nutrient-dense crops.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

➲ **Established:** In 1972 under a **Memorandum of Agreement** between the **Government of India** and **CGIAR**.
➲ **Objective:** Premier drylands agricultural research institute dedicated to uplifting smallholder farmers and ensuring food security in semi-arid tropics.
➲ **Headquarters:** Asia (India), with offices in Eastern and Southern Africa and West and Central Africa.

EXTENSION OF PM-AASHA SCHEME EXTENDED TILL 2025-26

Context

Recently, the Union Government approved the continuation of the Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA) Scheme during the 15th Finance Commission Cycle up to 2025-26.

About

➲ Launched in 2018, **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)** is an umbrella scheme aimed at guaranteeing **Minimum Support Price (MSP)** to farmers, particularly for **pulses, oilseeds, and copra**.
➲ It ensures **remunerative prices for farmers** and **price stability in the agricultural sector**.
➲ **Key Components of PM-AASHA:**
- ***Price Support Scheme (PSS)***
  - Procures **pulses, oilseeds, and copra** at **MSP**.
  - Central Nodal Agencies (CNAs) carry out procurement with state agencies.
  - Only produce meeting **Fair Average Quality (FAQ)** standards is procured.
- ***Price Deficiency Payment Scheme (PDPS)***
  - Compensates **pre-registered farmers** for the difference between **MSP and market price**.
  - No physical procurement of produce is involved.
  - Applicable to **oilseeds**, requiring transactions through **transparent auction processes** in notified market yards.
- ***Private Procurement & Stockist Scheme (PPSS) (Pilot Basis)***
  - Involves **private stockists** in **oilseed procurement** on a pilot basis.
  - Implemented in selected **Agricultural Produce Market Committees (APMCs)** or districts.
  - Allows states to engage private players for efficient procurement.

➲ **Key Changes in PM-AASHA (2024)**
- ***Convergence of PSS and PSF Schemes***
  - Merged **Price Support Scheme (PSS)** and **Price Stabilization Fund (PSF)** to enhance efficiency.
  - Aims to protect consumers from **extreme price volatility** of agri-horticultural commodities.
  - Maintains a **strategic buffer stock** of pulses and onions to ensure **affordable prices**.
  - Discourages **hoarding and speculation** by ensuring adequate supply.
- ***Integration of Market Intervention Scheme (MIS)***
  - Addresses **perishable agricultural and horticultural commodities** like onions, potatoes, and tomatoes.
  - Activated when prices drop by **at least 10% from the previous normal season**.
  - Provides **price stability** and safeguards farmers' incomes during steep price declines.

BHARAT TEX 2025

Context

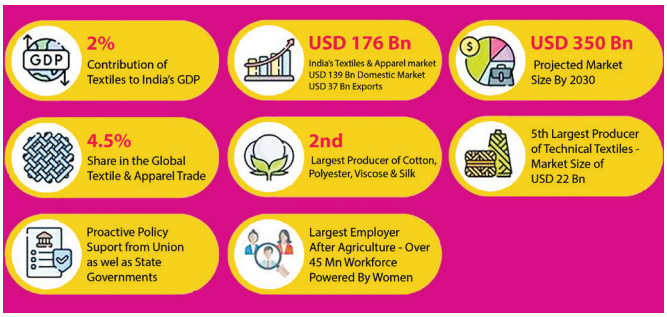
Recently, Bharat Tex 2025, India's largest global textile event, was held in New Delhi, showcasing the nation's textile innovations and international trade opportunities.

About

➲ **Bharat Tex 2025** served as a platform to accelerate the government's "Farm to Fibre, Fabric, Fashion, and Foreign Markets" vision.
➲ The event featured over **5,000 exhibitors** and more than 1,20,000 trade visitors, from 120+ countries including global CEOs, policymakers, and industry leaders, attended the event.

India's Textile Industry

- India is the **sixth-largest exporter** of textiles globally, contributing **8.21%** to the country's total exports in **2023-24.**
- The sector holds a **4.5% share** in global trade, with the **United States and European Union** accounting for **47%** of India's textile and apparel exports.
- The industry provides direct employment to over **45 million** people.



Government Initiatives

- **Prime Minister Mega Integrated Textile Region and Apparel (PM MITRA) Parks Scheme**
  - **Objective:** Create an integrated textiles value chain.
  - **Key Features:**
    - Establishment of **7 mega textile parks** with world-class infrastructure.
    - Provision of **plug-and-play facilities** and an integrated ecosystem.
    - **Expected Investment:** USD 10 billion.
- **Production Linked Incentive (PLI) Scheme**
  - **Objective:** Boost the manufacturing of **MMF (Man-Made Fibre) fabrics, apparel, and technical textiles**.
  - **Key Features:**
    - Approved incentives of **INR 10,683 crore (~USD 1 billion)**.
    - Encourages production of **MMF apparel, MMF fabrics, and technical textile products**.
- **Samarth - Building Capacity and Addressing Skill Gaps**
  - **Objective:** Enhance skills across the textile value chain.
  - **Key Features:**
    - **Demand-driven and placement-oriented** program.
    - Implementation across the textile value chain to meet industry needs.
    - **State-Level Initiatives:** Various states have their own skilling and training support schemes.
- **National Technical Education and Training Mission**
  - **Objective:** Promote research, innovation, education, and market development in **technical textiles**.
  - **Target:** Achieve **USD 300 billion** by 2047.
  - **Key Features:**
    - Support for Research, Innovation, and Development (RID).
    - Education, training, skill development, and market promotion.

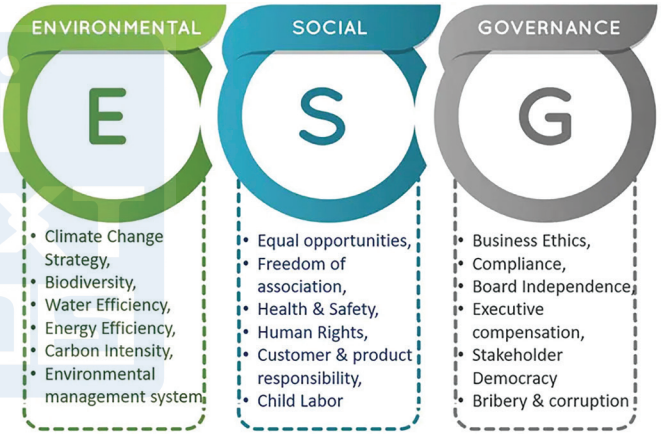
ESG FRAMEWORK

Context

The Securities and Exchange Board of India (SEBI) has proposed new measures to regulate ESG Rating Providers (ERPs), ensuring greater transparency, accountability, and consistency in ESG assessments.

About

- It is a set of standards that assess how a company operates responsibly concerning the planet and people. It includes:
  - **Environmental:** How well a company manages its environmental impact.
  - **Social:** How it treats employees, customers, suppliers & communities.
  - **Governance:** Its leadership, ethics, and corporate accountability.



SEBI's Key Proposals

- **Withdrawal of ESG Ratings:** ERPs can withdraw ratings if there are no subscribers, but ratings part of index-linked packages (e.g., Nifty 50) cannot be withdrawn selectively.
- **Issuer-pays model:** Ratings can be withdrawn after at least three years or 50% of the security's tenure (whichever is higher), with approval from 75% of bondholders.
- **Disclosure of Rating Rationale:** ERPs following a subscriber-pays model must provide detailed rating rationales only to subscribers, but ESG ratings themselves should be disclosed publicly. Stock exchanges will be required to display ESG ratings prominently on their websites.
- **Governance and Oversight:** Category-II ERPs will have to conduct internal audits and form a Nomination & Remuneration Committee (NRC) within two years of the new rules being implemented.

Implications for Stakeholders

- **Investors & Issuers:** Greater clarity and standardization in ESG ratings will help investors make more informed decisions.

- **ESG Rating Providers:** Increased compliance and governance requirements may add operational overhead but will enhance credibility.
- **Listed Companies:** Public display of ESG ratings on stock exchanges will add transparency, possibly influencing investor perception.

PREDATORY PRICING

Context

Recently, the Competition Commission of India (CCI) released the draft Competition Commission of India (Determination of Cost of Production) Regulations, 2025, for predatory pricing.

About

- **Definition:** Predatory pricing refers to the practice of selling goods or services below the cost of production with the intention of **eliminating competition**.
- **Strategy:** Typically employed by **market giants with substantial financial resources**.
  - Involves setting prices **below average variable costs**, accepting **short-term losses** to force competitors out of the market.
- **Impacts:**
  - **Short-term benefit:** Consumers may enjoy **lower prices**.
  - **Long-term harm:** Once competitors are driven out, the dominant firm may **increase prices**, negatively impacting consumers and market competition.
- **Regulation:**
  - **Competition Act, 2002:** Prohibits predatory pricing under **Section 4(2)(a)(ii)** as an **abusive practice by dominant enterprises**.
- **Draft Regulations (Latest Developments):**
  - Recent updates to the regulations **redefine the methodology** for calculating costs involved in predatory pricing allegations, replacing the **2009 regulations**.
  - Part of a comprehensive regulatory update under the **Competition (Amendment) Act, 2023**, aimed at **modernizing India's competition law**.
  - The new regulations seek to **align India's approach** with **global best practices and contemporary economic theories**.

INLAND WATERWAYS TERMINAL (IWT)

Context

Recently, the Union Minister of Ports, Shipping and Waterways inaugurated an Inland Waterways Terminal (IWT) on the Brahmaputra River in Jogighopa, Assam.

Key Features:

- **Strategic Importance:**
  - The IWT system acts as a **port of call** for trade with **Bangladesh**.
  - A **port of call** is a stop where a ship **loads or unloads cargo**, **embarks or disembarks passengers**, or allows **crew changes** on an offshore vessel.
  - It enhances **logistics and connectivity** in **Eastern India**, fostering **trilateral trade** with **India, Bhutan, and Bangladesh**.
- **Economic Corridor Development:**
  - Part of the **Bharatmala Programme** to strengthen regional connectivity.
  - Aims to boost **trade efficiency** and reduce transportation challenges.
  - Facilitates **seamless movement of goods** between India, Bhutan, and Bangladesh.
- **Foundation and Investment:**
  - The foundation stone for the terminal was laid by the **Prime Minister in February 2021**.
  - Set up at a cost of **₹82 crore** to support efficient cargo movement.
  - Provides an **eco-friendly and cost-effective alternative** by utilizing the **Brahmaputra river** as a transportation route.
  - Reduces **transportation expenditure**, making it more economical for traders.
- **Trade and Economic Impact:**
  - By **2027**, the terminal is expected to handle a cargo volume of **1.1 million tonnes per annum**.
  - Will transform **regional connectivity** and significantly **bolster trilateral trade** with **Bhutan and Bangladesh**.
  - Supports **sustainable transport** by minimizing carbon emissions and reducing road congestion.

Inland Waterways Authority of India (IWAI)

- **Establishment:** It is a statutory body constituted under the **Inland Waterways Authority of India Act, 1985**.
- **Purpose:**
  - The primary objective is to develop and maintain **Inland Water Transport (IWT) infrastructure** on national waterways.
  - The projects are executed using grants received from the **Ministry of Ports, Shipping and Waterways**.
- **Headquarters:** Located in **Noida, Uttar Pradesh**.
- **Regional Offices:** The Authority has five regional offices situated at:
  - Guwahati, Assam
  - Patna, Bihar
  - Kochi, Kerala
  - Bhubaneswar, Odisha
  - Kolkata, West Bengal
- **Nodal Ministry:** Functions under the **Ministry of Ports, Shipping and Waterways**.

4 ENVIRONMENT

INCREASE IN INDIA'S TIGER TERRITORY

Context

Recently, a new study revealed that India's tiger territory expanded by 30% between 2006 and 2018.

About

- **India's Global Significance in Tiger Conservation**
  - India hosts 75% of the world's tiger population, making it the largest habitat for tigers globally.
  - According to the **2022 Tiger Population Estimation (released in 2023)**, India has **3,682 tigers**.
  - These tigers are protected across **57 reserves**, spanning **82000 sq km**.
- **Tiger Distribution Across Indian Landscapes:** Tigers in India are mainly concentrated in:
  - **Shivalik Hills and Gangetic Plains**
  - **Central Indian and Eastern Ghats landscape** (extending to Odisha and Andhra Pradesh)
  - **Western Ghats** (home to several key tiger reserves)
  - **State-wise:** The largest tiger population of **785 is in Madhya Pradesh,** followed by Karnataka (563) & Uttarakhand (560), and Maharashtra (444).
- **Habitat Expansion and Human-Tiger Coexistence**
  - Between **2006 and 2018**, the **tiger-occupied area in India expanded by 30%**.
  - Tigers **coexist with approximately 6 crore people** in **45% of tiger-occupied landscapes**, highlighting the **challenges of human-wildlife interaction**.
- **Habitat Classification in Tiger Reserves**
  - **Core Areas (25% of occupied habitats)**: Strictly protected zones within tiger reserves.
  - **Buffer Areas & Wildlife Sanctuaries (20%)**: Semi-protected regions where limited human activity is allowed.
  - **Tiger Corridors (10%)**: Forested linkages that **facilitate tiger movement between two reserves**, ensuring genetic diversity and long-term survival.
- **Gaps in Tiger Distribution & Conservation Challenges**
  - **Key tiger habitats in Chhattisgarh, Odisha, and Jharkhand (spanning ~1,57,000 sq km)** lack tiger populations, signaling areas for focused recovery programs.
  - **Absence of humans does not always mean tiger survival**: In **central-eastern India (Odisha, Chhattisgarh, Jharkhand)**, factors like:
    - Armed insurgencies
    - Competition for forest resources (due to poverty)
    - Mining and infrastructure development
    - Deforestation and habitat fragmentation

Tiger

- **Scientific Name:** Panthera tigris
- **Common Name:** Bengal Tiger
- **Habitat and Distribution:** Tigers are widely distributed from the Himalayas to the rainforests of southern Western Ghats and from the dry forests of Rajasthan to the moist forests of north-east India.
- **IUCN Conservation Status:** Endangered
  - Tigers are listed in Schedule I of the Wildlife Protection Act (WPA) of 1972.
- **Threats:**
  - Habitat and loss of prey species
  - Hunting, poaching, and illegal trade
  - Conflict with humans

FRAMEWORK AGREEMENT ON INTERNATIONAL BIG CAT ALLIANCE (IBCA)

Context

Recently, the International Big Cat Alliance was officially established as a treaty-based intergovernmental organization and international legal entity.

About

- **Origins**
  - IBCA was launched by Indian Prime Minister Narendra Modi in 2023 during the 50th anniversary of Project Tiger.

- The initiative was formally approved by the Union Cabinet in February 2024.

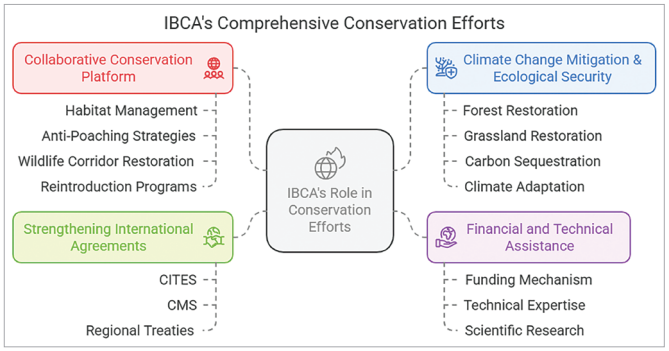
➲ **Implementation**
- Established under the National Tiger Conservation Authority (NTCA), which operates under the Ministry of Environment, Forest & Climate Change (MoEFCC), Government of India.
- Functions as a global platform to:
  - Share conservation expertise across countries.
  - Fund conservation initiatives targeting big cats.
  - Develop a repository of scientific and technical knowledge for big cat conservation.

➲ **Objectives of IBCA:** The primary goal of IBCA is the conservation of seven major big cat species:
- Tiger (Panthera tigris)
- Lion (Panthera leo)
- Leopard (Panthera pardus)
- Snow Leopard (Panthera uncia)
- Cheetah (Acinonyx jubatus)
- Jaguar (Panthera onca)
- Puma (Puma concolor)

➲ **Membership**
- ***Current Signatories of IBCA Framework Agreement:***
  - Republic of Nicaragua
  - Kingdom of Eswatini
  - Republic of India
  - Federal Republic of Somalia
  - Republic of Liberia
- ***Open to all UN Member States, including:***
  - Range Countries where these species naturally occur.
  - Non-Range Countries interested in supporting big cat conservation.

➲ **Need for IBCA:** Addressing the Global Big Cat Crisis
- ***Big cats face multiple threats, including:***
  - Habitat loss and fragmentation due to urbanization and deforestation.
  - Poaching and illegal wildlife trade driven by high-value black markets.
  - Climate change affecting prey availability and altering ecosystems.
  - Human-wildlife conflict, especially in areas with expanding human populations.
  - A global collaborative effort is necessary to prevent population decline and ensure sustainable conservation.

➲ **Financial Commitments**
- India has committed ₹150 crore (2023-2028) to IBCA.
- Additional funding sources are being explored, including:
  - Bilateral and multilateral partnerships with international conservation organizations.
  - Donor and philanthropic contributions to expand IBCA's funding pool.



INDIA'S FIRST BIOBANK

Context

Recently, as part of a national programme, India's first 'bio bank' was established at Padmaja Naidu Himalayan Zoological Park in West Bengal.

About

➲ **Overview**
- India's first wildlife **bio-bank** at **Padmaja Naidu Himalayan Zoological Park (Darjeeling Zoo)** is now fully operational.
- Established in **July 2024**, it has already collected **DNA and tissue samples from 60 animals representing 23 species**, with a primary focus on **endangered species**.

➲ **Biobank**
- A **biobank** (also known as a **frozen zoo**) is a facility that preserves **genetic material from animals** for conservation and research.

➲ **Key aspects include:**
- **Preserved Materials:** Cells, tissues, and reproductive samples from **endangered and deceased animals**.
- **Cryogenic Storage:** Samples are maintained at **-196°C in liquid nitrogen**, safeguarding **genetic diversity** over long periods.

➲ **National Conservation Initiative:** The biobank operates under a national conservation plan in collaboration with the **Centre for Cellular and Molecular Biology (CCMB)**, under the **Ministry of Science and Technology**.

➲ **Expansion Plans:** Similar biobanks are proposed at **Delhi National Zoo** and **Nandankanan Zoo (Odisha)**.

Significance

➲ **Conservation of Endangered Species:** Preserves **genetic material** from species on the brink of extinction, ensuring their **long-term survival**.

➲ **Species Revival Potential:** Enables **revival of extinct or critically endangered species** through advanced biotechnology such as **cloning**.

- **Genetic Diversity Preservation:** Prevents **inbreeding and genetic disorders** within **captive breeding programs** by maintaining a diverse gene pool.
- **Support for Research and Medicine:** Facilitates research in genetic diseases, evolutionary biology, and conservation strategies.
- **Backup for Conservation Breeding Programs:** Acts as a genetic repository, supporting breeding efforts for rare and endangered species.

PARAMBIKULAM TIGER RESERVE

Context

Recently, a faunal survey conducted by the Forest Department at the Parambikulam Tiger Reserve in Palakkad added 15 new species to the protected area's checklist.

About

- **Location:**
  - Situated in the **Palakkad and Thrissur districts** of Kerala.
  - Declared a **Tiger Reserve in 2009** under **Project Tiger**.
  - Covers an area of **391 sq. km**.
- **Rivers:** Major rivers flowing through the reserve include:
  - Parambikulam River
  - Sholayar River
  - Thekkady River
- **Tribal Communities:** Inhabited by four distinct tribes:
  - Kadar
  - Malasar
  - Muduvar
  - Mala Malasar
- **Flora:**
  - ***Predominantly consists of:***
    - Mixed deciduous forests
    - Evergreen forests
    - Semi-evergreen forests
  - ***Unique habitats include:***
    - Montane and marshy grasslands (locally known as 'vayals')
    - Presence of **teak plantations** and **deep freshwater ecosystems** formed by three dams, adding to the ecological diversity.
- **Fauna:**
  - Hosts one of the **densest gaur populations**.
  - Home to **49 species of mammals**, including:
    - Bengal tigers
    - Asian elephants
    - Indian leopards
    - Spotted deer
    - Rare species like lion-tailed macaques and Nilgiri marten
  - **Endemic species:**
    - **Tomopterna parambikulamana** (Parambikulam Frog)
    - **Garro surendranathanii** (Sucker fish)

INDIA'S 1ST VERTICAL BIFACIAL SOLAR PLANT

Context

Recently, the Union Minister for Housing and Urban Affairs inaugurated India's first vertical bi-facial solar plant installation at Okhla Vihar Metro station.

About

- **Background:**
  - The inauguration took place during the **5th International Conference on Green Metro Systems – The Future of Urban Mobility**.
  - The event was organized by the **Delhi Metro Rail Corporation (DMRC)** under the **i-Metro** banner, in collaboration with the **Confederation of Indian Industry (CII)** and **Indian Green Building Council (IGBC)**.
- **Bi-Facial Solar Panels:**
  - The **bi-facial panels** are capable of capturing **sunlight from both sides**, maximizing solar energy generation.
  - They are strategically installed on the **metro's elevated structure**, making efficient use of space **without occupying additional land**.
- **Significance:**
  - Demonstrates a **transition from thermal to renewable energy** in metro systems.
  - Incorporates **solar rooftops** and **regenerative braking technology** to enhance **sustainability**.
  - Supports **renewable energy goals** while promoting **greener urban mobility**.

ARAVALI SAFARI PARK PROJECT

Context

Recently, the Haryana government unveiled plans for the Aravali safari park project, spanning 3,858 hectares across Gurugram and Nuh, envisioned as the world's largest safari park.

About

- **Overview:**
  - The project aims to become the **largest curated safari park in the world**.
  - Currently, the largest curated safari park outside Africa is the **Sharjah Safari Park**, which opened in **February 2022** and covers around **2,000 acres**.

- **Objective:**
  - **Boost tourism** by attracting domestic and international visitors.
  - **Generate employment opportunities** for local communities, promoting socio-economic development.
- **Ecological Concerns:**
  - **Increased vehicular traffic and construction** may harm the **eco-sensitive zone** where the park is proposed.
  - The **Aravali hills** act as **crucial water reserves** for the **water-scarce regions of Gurugram and Nuh**.
  - Disruption to natural resources could **worsen water scarcity** in the area.
  - The proposed **"Underwater Zone"** may **alter water levels**, further depleting groundwater in an area already marked as **"overexploited"** by the **Central Ground Water Board**.
- **Legal and Environmental Restrictions:** The proposed park area is classified as a **"forest"**, where **deforestation, land clearing, and construction** are strictly prohibited.
  - Multiple **Supreme Court and National Green Tribunal (NGT) orders**, under the **Forest Conservation Act, 1980**, restrict such activities.

Additional Information

- **Overview:**
  - The **Aravallis of Northwestern India** are among the **oldest fold mountains in the world**.
  - These mountains now form **residual ranges** with an elevation ranging from **300 meters to 900 meters**.
  - They originated from **orogenic movements**, where **two convergent plates moved towards each other**, forming folded crustal rocks.
  - The Aravallis date back to **millions of years**, originating when the **pre-Indian subcontinent collided with the Eurasian Plate**.
- **Geographical Extent:** The range starts from **Himmatnagar in Gujarat** and stretches up to **Haryana, Rajasthan, and Delhi**, covering approximately **720 km**.
  - In Rajasthan, the mountains are divided into **two main ranges**:
    - Sambhar Sirohi Range
    - Sambhar Khetri Range
  - These ranges extend about **560 km** within Rajasthan.
- **Hidden Limb of the Aravallis:**
  - A lesser-known extension of the Aravallis, known as the **hidden limb**, stretches from **Delhi to Haridwar**.
  - It creates a **natural divide between the drainage systems** of the **Ganga and Indus rivers**, playing a crucial role in the region's hydrology.

- **Eco-Sensitive Zones (ESZs):** According to the **National Wildlife Action Plan (2002–2016)** by the **Ministry of Environment, Forest, and Climate Change (MoEFCC)**:
  - States should designate land within **10 km** of national parks and wildlife sanctuaries as **Eco-Sensitive Zones (ESZs)** under the **Environmental (Protection) Act, 1986**.
  - The **10-km rule** is generally applied, but areas beyond this range can also be notified as **ESZs** if they contain **sensitive corridors** or significant ecological zones.

PRANI MITRA AND JEEV DAYA AWARD

Context

Recently, Animal Welfare Board of India (AWBI) announced the Prani Mitra and Jeev Daya Award Ceremony.

About

- **Objective:** Recognize outstanding individuals and organizations for **remarkable contributions to animal welfare and protection**.
- **Categories of Awards:**
  - ***Prani Mitra Award:***
    - **Advocacy (Individual)** - For advocating animal rights and welfare.
    - **Innovative Idea (Individual)** - For creative solutions in animal welfare.
    - **Lifetime Animal Service (Individual)** - For lifelong dedication to animal service.
    - **Animal Welfare Organizations** - For committed animal care efforts.
    - **Corporate, PSUs, Government Bodies, or Co-operatives** - For organizational contributions.
  - ***Jeev Daya Award:***
    - **Individual** - For personal contributions to animal welfare.
    - **Animal Welfare Organization** - For collective efforts and initiatives.
    - **Schools, Institutions, Teachers, or Children** - For educational and awareness contributions.

Animal Welfare Board of India (AWBI)

- The Animal Welfare Board of India is a **statutory advisory body** promoting animal welfare in the country.
- **Establishment:** It was established in **1962** under the **Prevention of Cruelty to Animals Act, 1960.**
  - AWBI was started under the stewardship of **Rukmini Devi Arundale,** well known humanitarian.
- **Responsibilities:** Ensures that animal welfare laws in India are diligently followed.
  - **Provides grants** to Animal Welfare Organizations.
  - **Advises the Government of India** on animal welfare issues.
- **Governance:** The Board consists of **28 Members**.
- **The term** of office of Members is for a period of **3 years.**

TrailGuard AI SYSTEM

Context

Recently, the Similipal Tiger Reserve deployed 100-150 AI-enabled cameras as part of the TrailGuard AI system to detect and deter poachers.

About

- **Overview:** An end-to-end, camera-based alert system designed to enhance wildlife conservation and promote human-wildlife coexistence in remote areas.
- **Features of TrailGuard AI System:**
  - ***Advanced Hardware and AI Integration:***
    - Combines durable outdoor hardware with on-the-edge AI algorithms for efficient operation.
    - Supports real-time transmission capabilities and can be deployed along trails or access points in areas of interest.
  - ***Autonomous Detection and Rapid Alerts:***
    - Detects target objects autonomously and transmits real-time alerts. Enables rapid responses to poaching, illegal logging, and wildlife intrusions.
    - Monitors endangered or invasive species efficiently. Transmits human and wildlife activities from remote areas in under 30 seconds.
- **Working Mechanism:**
  - **Low-Power and High-Power Modes:** Operates on **low-power mode** by default, switching to **high-power mode** when movement is detected.
    - Captures images and performs **AI inference on the edge**, classifying objects as **animals**, **humans**, or **vehicles**.
  - **Efficient Data Transmission:** If deemed necessary by AI, the system transmits an image via the **cellular network** to the end-user within **30-40 seconds**.

Similipal Tiger Reserve

- **Location:**
  - Situated in the **Mayurbhanj District** in the **northernmost part of Odisha**.
  - Spans an area of **2,750 sq km**. Renowned for **scenic waterfalls** like **Joranda** and **Barehipani**.
  - Encompassed by **high plateaus and hills**, with the **twin peaks of Khairiburu and Meghashini** reaching **1,515 m** above sea level.
- **Vegetation and Ecosystem:** Dominated by Northern tropical moist deciduous forests with some semi-evergreen patches.
- **Conservation:**
  - Declared a **Tiger Reserve under Project Tiger** in **May 1973**.
  - Designated as a **Wildlife Sanctuary** by the **Government of Odisha in 1979**.
  - **National Park status was proposed** for **303 sq km** of the sanctuary in **1980**.
  - Recognized as a **Biosphere Reserve by UNESCO** in **May 2009**.
  - Part of the **Mayurbhanj Elephant Reserve**, which also includes **Hadgarh** and **Kuldiha Wildlife Sanctuaries.**

NOCTURNAL BULL ANT SPECIES

Context

Recently, scientists discovered that two nocturnal bull ant species, Myrmecia pyriformis and Myrmecia midas, navigate at night using polarized moonlight.

About

- **Navigational Use of Polarised Moonlight:**
  - Many **nocturnal animals**, including insects like **ants and bees**, use the **moon's position** to navigate while foraging.
  - Only a few animals have been found to use **polarised moonlight** for orientation, with the **dung beetle** being the first known instance.
  - This study marks the **second instance** of an animal using polarised moonlight.
- **Detection by Nocturnal Bull Ants:**
  - Nocturnal bull ants can **detect and use polarised moonlight** throughout the **lunar cycle** for foraging, even under a **crescent moon** when moonlight intensity is **80% lower**.
  - Unlike polarised sunlight, which many animals use, **polarised moonlight** is **a million times dimmer**.
  - Scientists had previously observed that **M. pyriformis and M. midas ants** used **polarised sunlight** for navigation.
  - As sunlight fades at dusk, **M. midas ants** return overnight, while **M. pyriformis ants** increase activity on **full-moon nights**.
- **E-Vector Pattern and Polarised Light:**
  - Both the **sun and the moon emit unpolarised light**.
  - Light is an **electromagnetic wave** where the **electric field oscillates perpendicular** to the **magnetic field**.
  - As light moves through the **earth's atmosphere**, it is **scattered by particles**, becoming **polarised**.
  - Polarisation indicates a **specific orientation of the electric field**.
  - Scattered sunlight and moonlight become **linearly polarised**, with the **electric field oscillating in a fixed plane** perpendicular to the wave's motion.

- The scattered light becomes **oriented 90° to the incident light**, forming a unique **e-vector pattern** in the sky, detectable through special filters.

➲ **Stability of E-Vector Pattern as a Compass:**

- The **e-vector pattern** remains **stable**, giving animals with detection capability a **natural compass**.
- When the **sun or moon is near the horizon**, the **polarised skylight pattern** is **simple and uniform**, running **parallel to the north-south axes**.
- This **stability** allows animals like nocturnal bull ants to **navigate effectively**, even in low light conditions.

Features	Myrmecia pyriformis	Myrmecia midas
Size	14–23 mm long, with females growing up to 26 mm	13–15 mm long, with queens growing up to 18–19 mm
Color	Dark red mandibles, and sometimes blackish-brown thorax	Red head and thorax, black gaster, brownish red mandibles, antennae, and legs

SHATAVARI (ASPARAGUS RACEMOSUS)

Context

Recently, the Ministry of Ayush launched the campaign "Shatavari – For Better Health" to promote the medicinal and health benefits of Asparagus racemosus.

About

➲ **Botanical Classification**

- **Scientific Name**: *Asparagus racemosus*
- **Family**: Asparagaceae (formerly Liliaceae)
- **Common Names**: Shatavari, Satawar, Satamuli
- **Meaning**: The name **Shatavari** means "acceptable to many," highlighting its diverse medicinal uses.

➲ **Appearance**

- **Type**: A **woody climber** that can grow up to **1–2 meters** in height.
- **Flowers**: Small, white, and grow in clusters on spikes.
- **Roots**: The plant has tuberous roots, which are the primary part used in Ayurvedic medicine.

➲ **Habitat and Distribution**

- Found at **low altitudes in shaded areas** and **tropical climates** across **Asia, Australia, and Africa**.
- It thrives in **moist, well-drained soils**, often seen in forests and grasslands.

➲ **Ayurvedic Significance**

- Known as the **"Queen of Herbs"** in Ayurveda for its health benefits.
- **Charaka Samhita** (by Charaka) and **Ashtanga Hridayam** (by Vagbhata) mention *Asparagus racemosus* as a key ingredient in formulations for **women's health**.
- Used in traditional medicine to **balance hormones, enhance fertility, and support overall reproductive health**.

➲ **Medicinal Uses**

- **Roots** are the most valuable part, dried and used in medicinal formulations.
- **Tonic and Rejuvenator**: Strengthens overall health and boosts immunity.
- **Diuretic**: Helps in flushing out toxins through urine.
- **Galactagogue**: Promotes **breast milk production** in lactating mothers.
- **Ulcer Healing**: Strengthens the mucosal lining, providing **cytoprotective effects** against ulcers.
- **Female Reproductive Health**: Regulates **menstrual cycles, relieves menopause symptoms, and supports fertility**.

BLUE-CHEEKED BEE-EATER (MEROPS PERSICUS)

Context

Recently, the first breeding site of the Blue-Cheeked Bee-eater in peninsular India was discovered in the saltpans of Aandivilai in Kanniyakumari district.

About

➲ **Physical Characteristics:** The Blue-Cheeked Bee-Eater is a **slender bird** with a predominantly **green plumage.**

- Its face has blue sides, a **black eye stripe**, and a **yellow and brown** throat.
- The bird possesses a **black beak**, which is adapted for catching insects.
- It can grow up to **31 cm** in length, with its two central tail feathers extending an additional **7 cm.**

➲ **Habitat:** The Blue-Cheeked Bee-Eater is a migratory bird found across **Northern Africa, the Middle East, Central Asia, and India.**

➲ **Diet:** The species primarily feeds on insects, including bees, wasps, and hornets.

➲ **IUCN Status:** Least Concern.

MITHUNS

Context

In Arunachal Pradesh, mithuns will be fitted with fluorescent collars to enhance their visibility on highways and reduce the risk of fatal accidents.

About Mithuns (Bos Frontalis)

- **Overview**
  - Mithun, also known as **Gayal**, is a **heavily built, semi-domesticated bovine species**.
  - It is believed to have originated **over 8,000 years ago**, descending from the **wild Indian gaur (bison)**.
  - Due to its strength and resilience, it is commonly referred to as the **"Cattle of the Mountain."**
- **Distribution and Habitat**
  - Found predominantly in **Northeast India**, with the highest population in **Arunachal Pradesh**.
  - Also distributed in parts of **Southeast Asia**, including **Bangladesh, Myanmar, and Bhutan**.
  - Inhabits **tropical evergreen rainforests**, thriving in hilly and forested regions.
  - **State Animal** of **Arunachal Pradesh** and **Nagaland**.
  - The **Adi tribe of Arunachal Pradesh** celebrates the annual **'Soulung' festival** to honor the birth and arrival of Mithun on Earth.
- **Conservation Status**
  - **IUCN Red List**: **Vulnerable** – facing threats due to habitat loss and decreasing population.
  - **CITES (Convention on International Trade in Endangered Species)**: **Listed in Appendix I**, indicating the need for strict protection against exploitation.

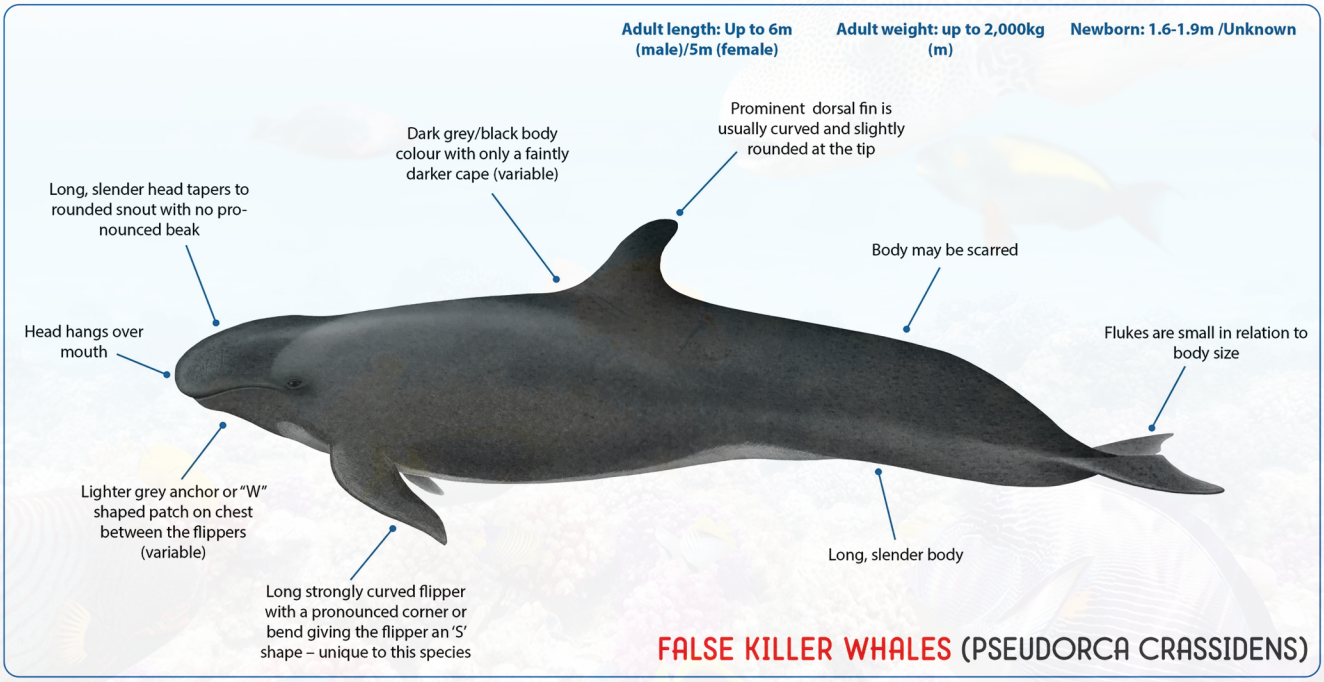
FALSE KILLER WHALES

Context

Recently, Australia commenced euthanizing false killer whales stranded on a remote beach in Tasmania.

About False Killer Whales (Pseudorca crassidens)

- **Characteristics:**
  - **Also known as Orcas**, they are found **across the world** and are the **largest members of the Delphinidae family** (dolphins).
  - They are the **most widely distributed of all cetaceans**.
  - The **Delphinidae family** also includes other **larger species** like **long-finned and short-finned pilot whales**, despite their names containing "whale" instead of "dolphin".
- **Behavior:**
  - Killer whales are **highly social** and typically live in groups called **pods**.
  - Pods consist of **maternally related individuals** that are seen together **more than half the time**.
  - They rely on **underwater sound** for **feeding, communication, and navigation**.
- **Appearance:** Killer whales are one of the most **recognizable marine mammals** due to their **distinctive black and white bodies**.
- **Conservation Status:** According to the **IUCN**, killer whales are classified as **"Data Deficient"**, indicating insufficient information to assess their risk of extinction.



5 GEOGRAPHY

OCEAN COORDINATION MECHANISM

Context

Recently, the Intergovernmental Oceanographic Commission of UNESCO (UNESCO-IOC) announced the signing of a Memorandum of Understanding (MoU) to establish the Ocean Coordination Mechanism (OCM).

About

- **Overview**
  - The **Ocean Conservation Mechanism (OCM)** is the latest initiative aimed at addressing global oceanic challenges.
  - **Announced by**: **Intergovernmental Oceanographic Commission (IOC) of UNESCO** on **January 14, 2025**.
  - **Focus Areas**: **Caribbean and North Brazil Shelf**, both rich in marine biodiversity and crucial for local economies.
- **Significance of the Focus Areas**
  - **Coral reefs & fisheries** in these regions contribute **$610 million annually** to local economies.
  - The **North Brazil Shelf**, a **Large Marine Ecosystem**, is home to **500+ fish species** and serves as a **natural storm barrier**.
- **Lessons from Previous Initiatives**
  - Builds on **past conservation programs**, such as the **Pacific Islands Regional Ocean Policy (PIROP)**.
  - PIROP faced **challenges** like **vague goals, financial constraints, and lack of integration**, leading to **inequitable access** to ocean resources.
  - **OCM** improves upon these by setting **clear objectives** and fostering **collaborative, inclusive, and sustainable conservation strategies**.
- **Key Features**
  - **Blue Carbon Projects**: Promotes the use of **coastal ecosystems for carbon storage**, benefiting both the **environment** and **local communities**.
  - **Financial Sustainability**:
    - **Initial funding** of **$15 million** from the **Global Environment Facility (GEF)** through **UNDP/GEF PROCARIBE+ Project**.
    - **Additional co-financing** of **$126.02 million**, but still **lower than** the **Global Fund for Coral Reefs**, which has raised **$225 million** and aims for **$3 billion by 2030**.
  - **Community-Centric Approach**
    - Integrates traditional knowledge with scientific research, ensuring culturally relevant conservation efforts.
    - Aims to empower local communities and promote sustainable ocean resource management.

UNESCO's Intergovernmental Oceanographic Commission (IOC)

- **Overview**
  - The **Intergovernmental Oceanographic Commission (IOC)** is a specialized body under **UNESCO** that promotes **international cooperation in marine sciences**.
  - Its primary goal is to enhance the **management of oceans, coasts, and marine resources** for sustainable development.
  - **Established:** 1960
- **Member States**: **150**, including **India, which has been a member since 1946**.
- **Role in the UN's Ocean Decade (2021-2030)**
  - The IOC is responsible for coordinating the United Nations Decade of Ocean Science for Sustainable Development (2021-2030), also known as the "Ocean Decade".
- **Key Functions & Activities**
  - **Capacity Development**: Strengthening scientific expertise and technological capabilities in marine research.
  - **Ocean Observations & Services**: Supporting real-time monitoring and data-sharing for better oceanic management.
  - **Ocean Science**: Encouraging global research and collaboration to address marine challenges.
  - **Tsunami Warning Systems**: Developing **early warning mechanisms** to mitigate risks from **tsunamis and other ocean-related disasters**.
- **Ocean Literacy:** Promoting awareness and education about ocean conservation and sustainability.

ANTICYCLONE SYSTEM

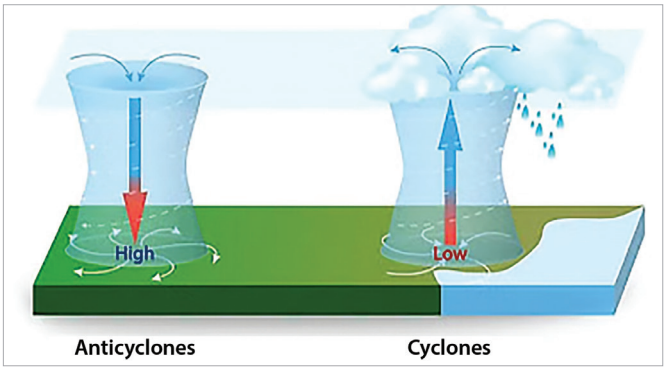
Context

Recently, weather experts attributed the unusual temperature spike in Mumbai to the presence of an anticyclone system along the western coast.

About

- **Definition**
  - **Anticyclones** are **areas of sinking air**, leading to **high atmospheric pressure**.

- They are the **opposite of cyclones (depressions)**, which are associated with **low pressure, rising air, and stormy weather**.
- Anticyclones often **block depressions**, slowing down or redirecting storms, and are thus known as **'Blocking Highs'**.



➲ **Characteristics of an Anticyclone**
- ***Pressure and Wind Patterns:***
  - **Small pressure gradients**, meaning the air pressure does not change rapidly, resulting in **gentle winds**.
  - **Air descends and warms**, leading to **dry and warm weather**.
  - Anticyclones are **much larger than cyclones** and can last for **days or even weeks**.
- ***Blocking of Weather Systems:***
  - Anticyclones **block incoming depressions (low-pressure systems)**, either **slowing down storms** or **forcing them around the high-pressure area**.
  - This can lead to prolonged **stable weather conditions**.
- ***Wind Circulation in Anticyclones:***
  - **Northern Hemisphere:** Air moves **clockwise** due to the **Coriolis Effect**.
  - **Southern Hemisphere:** Air moves **counterclockwise (anticlockwise)**.

➲ **Anticyclones and Temperature Spikes in Mumbai**
- ***Wind Direction and Temperature Rise:***
  - **Easterly winds in the morning** bring cooler temperatures.
  - By **afternoon, north-westerly winds take over**, leading to a **rise in daytime temperatures**.
  - This pattern has led to **above-normal temperatures** in Mumbai.
- ***Role of the Arabian Sea Anticyclone:***
  - A **high-pressure system over the Arabian Sea** has caused the **north-westerly winds** to reach Mumbai, raising temperatures.
  - **Clear skies and bright sunlight** further contribute to the **heat buildup during the day** and **faster cooling at night**.
- ***Absence of Western Disturbances:***
  - **Western disturbances**, which normally bring rain and cool winds to Mumbai in February, are **absent**, allowing temperatures to remain high.

➲ **Effects of Anticyclones**
- ***Summer Impact:*** **Heatwaves** occur as air **sinks and warms**, trapping heat at the surface.
- ***Winter Impact:*** Can cause **cold waves** by trapping **cold air at the surface**. Leads to **fog and frost** in North India.
- ***Drought Conditions:*** Prolonged anticyclones **suppress rainfall**, increasing the risk of **droughts**.

COOK ISLANDS

Context

Recently, New Zealand has expressed serious concerns over the Cook Islands' plans to enter into a cooperation agreement with China.

About

➲ **Political Status**
- The **Cook Islands** is an island nation situated in the **South Pacific Ocean**, between **Tonga to the west** and **French Polynesia to the east**.
- It is a **self-governing country** in free association with **New Zealand**, meaning that while it has its **own government**; New Zealand handles **defense and foreign affairs** in consultation with Cook Islands' authorities.
- Citizens of the Cook Islands are also **New Zealand citizens**, allowing for **free movement** between the two nations.

➲ **Geography & Island Groups:** The Cook Islands comprises 15 islands, which are divided into two distinct groups based on their geological formation and population density:
- ***Northern Islands (6 islands)***
  - These islands are **coral atolls**, meaning they are formed from coral reefs and are **low-lying** with an **average elevation of just a few meters above sea level**.
  - They are **sparsely populated** due to limited land and resources.

- The **northern islands** include: ***Manihiki, Nassau, Penrhyn, Pukapuka, Rakahanga, Suwarrow etc.***
- ***Southern Islands (9 islands)***
  - These islands are **larger, volcanic in origin, and more densely populated** compared to the northern group.
  - **Rarotonga** is the **largest island** and the economic and administrative center of the nation.
  - The **highest point in the Cook Islands** is **Te Manga (652 meters)**, located on **Rarotonga**.

➲ **Capital:** The capital city of the Cook Islands is Avarua, which is located on Rarotonga Island.

➲ **Significance of the Cook Islands**

- Due to its **strategic location** in the Pacific, the Cook Islands plays an important role in **regional trade, tourism, and ocean conservation**.
- Tourism is the **largest contributor** to the economy, with visitors drawn to its **pristine beaches, coral reefs, and Polynesian culture**.
- The **islands' biodiversity**, especially in the northern atolls, makes them a hotspot for **marine conservation efforts**.

NETZARIM CORRIDOR

Context

Recently, Israeli forces withdrew from the Netzarim Corridor as part of the Israel-Hamas ceasefire agreement.

About

➲ **Location**

- The **Netzarim Corridor** is a **6-kilometre-long stretch** of land that runs from the **Israeli border in the east** to the **Mediterranean Sea in the west**.
- It is located **just south of Gaza City** and effectively **splits the Gaza Strip into northern and southern sections**.
- The corridor was named after the former **Netzarim settlement**, which was evacuated by Israel during its **2005 disengagement from Gaza**.

➲ **Strategic Importance**

- The corridor is **highly strategic** as it controls key access points **between the northern and southern parts of Gaza**.
- By securing the corridor, military forces can effectively **restrict movement** within the Gaza Strip, cutting off **supplies, reinforcements, and evacuations**.
- The corridor provides **direct access to the Mediterranean**, making it crucial for both **naval operations and controlling smuggling routes**.

➲ **Other Key Corridors in Gaza**

- ***Philadelphi Corridor***
  - A **14-kilometre-long buffer zone** along **Gaza's southern border with Egypt**.
  - It is **critical for controlling the Egypt-Gaza border** and preventing the **smuggling of weapons** through tunnels.
  - It has historically been a **hotspot for military operations**, with both **Israeli and Egyptian forces monitoring it closely**.
- ***Rafah Corridor***
  - Located at the **southernmost point of Gaza**, it connects the **Rafah Crossing**, the **only land border between Gaza and Egypt**.
  - The corridor is a **key exit point for civilians** and a crucial route for **humanitarian aid, fuel, and medical supplies**.
  - Control over this corridor directly impacts ***Gaza's access to the outside world***, making it a major focus of geopolitical discussions.

GULF OF EILAT (GULF OF AQABA)

Context

Recently, studies have revealed a notable halt in coral reef growth in the Gulf of Eilat (Gulf of Aqaba).

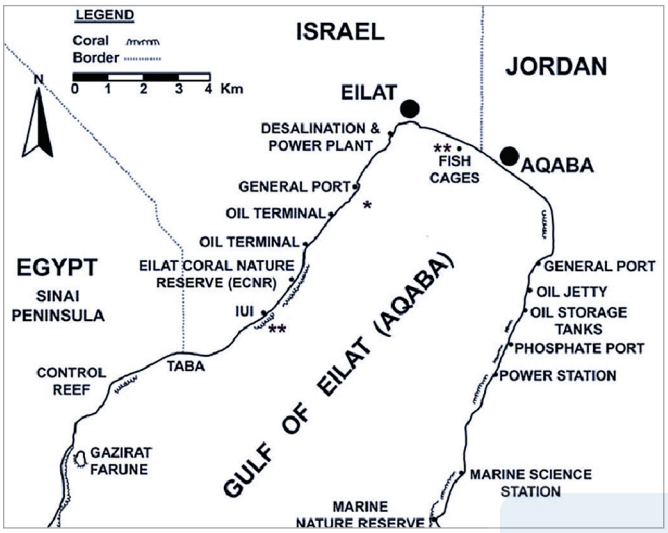
About

➲ **Overview**

- The **Gulf of Eilat**, also known as the **Gulf of Aqaba**, is the **northeastern extension** of the **Red Sea**.
- The **northern part of the Red Sea** is divided by the **Sinai Peninsula** into:

- Gulf of Aqaba (east)
- Gulf of Suez (west)

- It is situated along the **southeastern edge of the Sinai Peninsula** and **west of the Arabian Peninsula**.



- **Geological Formation and Connectivity**
  - It is part of the **East African Rift System**, formed due to **seismic activity** along the **Afro-Syrian Rift**.
  - The **Tiran Strait** connects the **Gulf of Aqaba to the Red Sea**, acting as a **strategic passageway** between **Asia and Africa**.
- **Ecological and Environmental Importance**
  - The **Gulf of Aqaba** supports **rich marine biodiversity** and houses **some of the world's most vibrant coral reefs**.
  - It serves as a **crucial habitat** for numerous aquatic species, making it **environmentally significant**.
- **Bordering Countries:** The Gulf of Aqaba is bordered by **four countries**: Israel, Jordan, Egypt and Saudi Arabia.
- **Strategic Importance of the Port of Aqaba**
  - **Al Aqabah (Port of Aqaba)** is located in **southwestern Jordan** on the **Gulf of Aqaba**.
  - It is **Jordan's only seaport**, playing a **critical role in the country's trade and economy**.

HONDURAS

Context

Recently, India sent 26 tons of humanitarian assistance to Honduras following the impact of Tropical Storm SARA.

About

- **Location**
  - **Honduras** is located in **Central America**.
  - It shares borders with:
    - Guatemala (west)
    - El Salvador (southwest)
    - Nicaragua (southeast)
  - It is also **bounded by water bodies**:
    - **Pacific Ocean** (south) via the **Gulf of Fonseca**
    - **Caribbean Sea** (north) via the **Gulf of Honduras**

- **Climate:**
  - **Tropical lowlands (coastal areas)**: These regions experience **hot and humid weather** year-round, with average temperatures ranging between **25°C and 32°C**.
  - **Interior highlands**: Due to elevation, temperatures in these areas tend to be **milder**, ranging from **16°C to 24°C**.
  - **Rainfall:** The country experiences a **rainy season from May to October** and a **dry season from November to April**. The Caribbean coast receives **significantly more rainfall** than the Pacific coast.
- **Terrain:**
  - Over **three-fourths** of Honduras is **mountainous**, featuring **rugged highlands and deep valleys**.
  - The **central and western regions** contain **the most significant mountain ranges**, which influence **weather patterns** and **economic activities** such as coffee cultivation.
  - The **coastal regions** and **river valleys** provide **fertile land** for **agriculture and human settlements**.
- **Highest Peak: Mount Las Minas** (**2,870 meters** above sea level) is the **tallest peak in Honduras**, located in the **Celaque National Park**.
- **Major Rivers:**
  - **Coco River**: Forms a natural border with Nicaragua and is vital for local ecosystems and indigenous communities.
  - **Patuca River**: The longest river in Honduras, crucial for hydroelectric projects and biodiversity.
  - **Ulúa River**: Supports agricultural irrigation and serves as a transportation route for local trade.
- **Lakes & Lagoons:**
  - **Lake Yojoa**: The only major lake in Honduras, covering 79 square kilometers. It is a biodiversity hotspot and a key area for tourism and fishing.

- **Caratasca Lagoon**: A coastal lagoon in the northeast, serving as an important wetland for marine and bird species.

- **Capital:** Tegucigalpa
- **Other Major Cities:**
  - **San Pedro Sula**: The **industrial hub** and second-largest city.
  - **La Ceiba**: A **major port city** along the Caribbean coast.
  - **Choloma**: Known for **manufacturing and trade**.

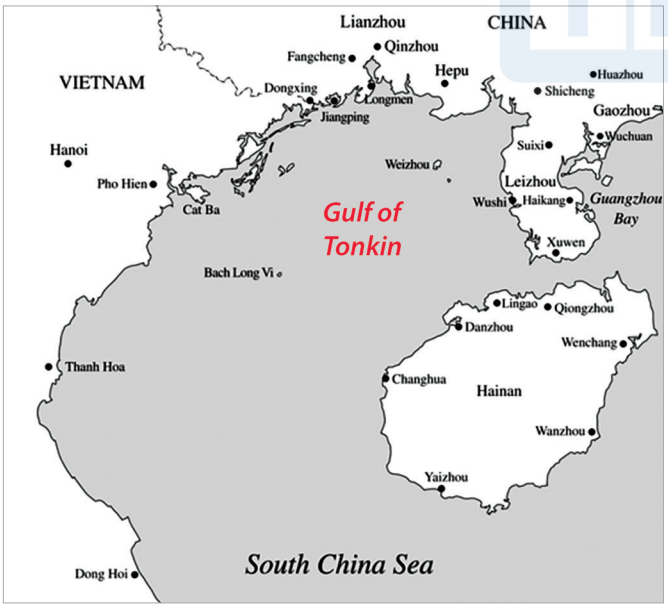
GULF OF TONKIN

Context

Recently, Vietnam's foreign ministry released a map outlining its baseline territorial claim in the Gulf of Tonkin, marking a significant development in regional maritime boundaries.

About

- **Location:** Situated in the **northwestern South China Sea**, off the coasts of **South China and Northern Vietnam**.
  - **Borders:**
    - **West/Northwest** – Vietnam's northern coastline.
    - **North** – Guangxi Zhuang Autonomous Region, China.
    - **East** – Leizhou Peninsula & Hainan Island, China.
  - **Connections:**
    - **South** – Opens into the South China Sea.
    - **Northeast** – Connected to the Hainan Strait.



- **Physical Features & Hydrology**
  - **Shallow depth (~60m), crescent-shaped**, nutrient-rich waters.
  - **Major rivers emptying into the Gulf: Red River (Vietnam)** – The largest, bringing sediment and nutrients.
    - Smaller rivers from **Vietnam and China**.
- **Economic Importance**
  - **Fishing Industry:** Major livelihood source for **Vietnam & China**.
  - **Ports & Trade Hubs:**
    - **Vietnam:** Haiphong (largest port), Ben Thuy.
    - **China:** Beihai (Pakhoi) port.
  - **Energy Resources:** Potential **oil & gas reserves**, leading to exploration activities.
- **Geopolitical Significance & Disputes**
  - **Gulf of Tonkin Incident (1964):** Led to U.S. involvement in the **Vietnam War**.
  - **Vietnam-China Disputes:** Over **exclusive economic zones (EEZs), fishing rights, and energy exploration**.
  - **Military Importance:**
    - **China** – Strategic naval base in **Hainan Island**.
    - **Vietnam** – Active naval presence to secure its interests.
- **Climate & Environmental Challenges**
  - **Tropical monsoon climate** – Hot, humid summers; cooler winters.
  - **Typhoons & Storms** – Affect shipping & coastal communities.
  - **Environmental Issues:**
    - **Overfishing** reducing marine biodiversity.
    - **Pollution** from industrial/agricultural runoff.
    - **Coastal erosion & sea level rise** due to climate change.

DEMOCRATIC REPUBLIC OF CONGO

Context

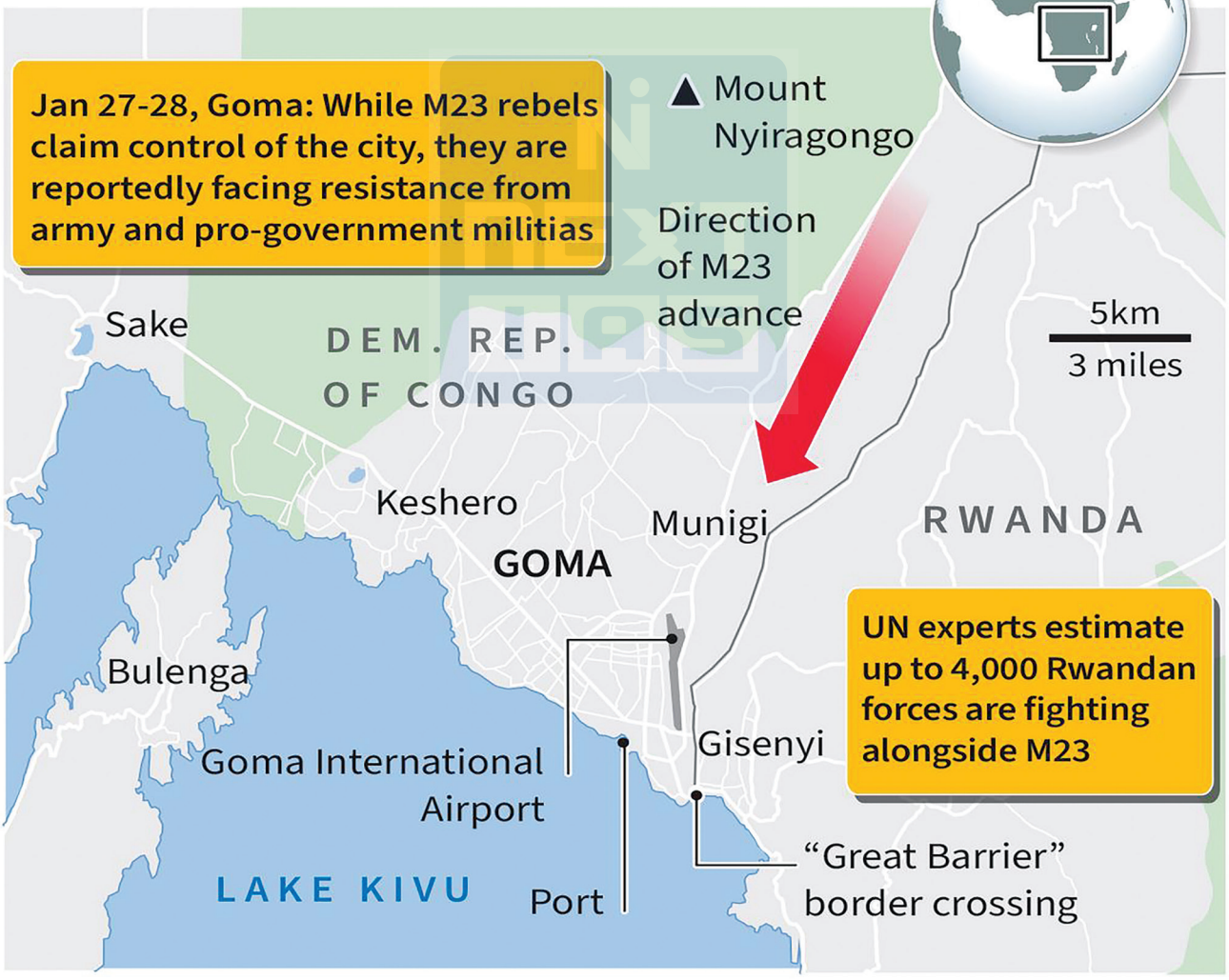
Recently, the armed group M23 has advanced in the Democratic Republic of Congo, raising concerns about a potential regional war and a public health crisis.

About DRC:

- **Location:**
  - Situated in **Central Africa**, the **Democratic Republic of Congo (DRC)** is the **second-largest country** on the continent.
  - It shares borders with **nine countries**: *Angola, Zambia, Tanzania, Burundi, Rwanda, Uganda, South Sudan, the Central African Republic, and the Republic of Congo.*
- **Topography & Terrain:**
  - Dominated by the **Congo Basin**, home to the world's **second-largest rainforest** after the Amazon.
  - The **Great Rift Valley** influences the eastern region, forming highlands and volcanic mountain ranges, including the **Virunga Mountains**.
  - Vast **savannas, plateaus, and river systems** characterize the landscape.
- **Climate & Vegetation:**
  - **Equatorial climate** in the central region, with high humidity and dense tropical forests.

M23 MILITIA

- One of about 100 armed factions vying for a foothold in mineral-rich eastern DRC
- Rwandan-backed group which consists primarily of Tutsis who failed to integrate into the Congolese army
- Led major insurgency against the DRC government in 2012, took up arms again in 2022. The group is estimated to have 6,500 fighters



- Latest rebel advance has forced thousands to flee Goma. The city of two million people is a vital humanitarian aid hub for the region
- The UN and other global powers fear that the conflict could spiral into a regional war similar to those of 1996-1997 and 1998-2003

6 INTERNAL SECURITY

INDIAN ARMY'S PINAKA MULTIPLE ROCKET LAUNCH SYSTEM (MRLS)

Context

The Defence Ministry has signed contracts worth ₹10,147 crore for the procurement of different types of ammunition for the Army's Pinaka Multiple Rocket Launch System (MRLS).

About Pinaka MRLS:

- A battle-proven artillery weapon.
- Developed by the **Defence Research and Development Organisation (DRDO)**, specifically by its **Armament Research and Development Establishment (ARDE)**.
- Designed for **indirect area fire** and operates effectively in all weather conditions.

Key Features:

- Each launcher carries **12 rockets**, with a battery of six launchers capable of firing **72 rockets simultaneously**.
- Can deploy various **warheads**, including **high-explosive and submunition warheads**.
- Has an operational range of **60 to 75 kilometers**.
- Initially developed as an **unguided system**, but the **Pinaka-Guided version** incorporates **INS/GPS navigation** for enhanced accuracy.

STRYKER INFANTRY COMBAT VEHICLE

Context

India and the United States continue to deepen their defence cooperation, with the Stryker Infantry Combat Vehicle (ICV) deal emerging as a key development.

About:

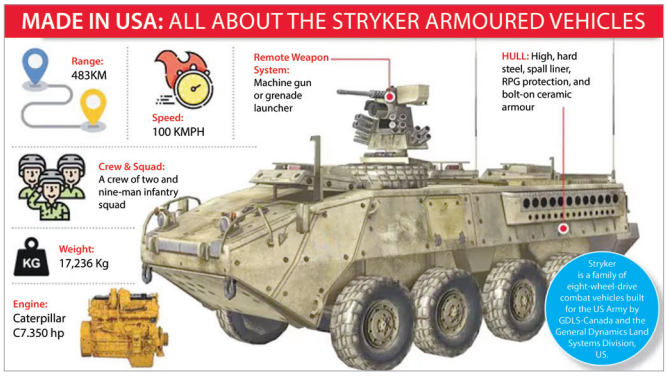
- The Stryker is a highly mobile, **eight-wheeled armoured infantry combat vehicle developed** by General Dynamics Land Systems (GDLS) in the U.S. and Canada.
- It is designed for **rapid deployment, high-altitude warfare**, and urban combat scenarios, making it a crucial asset for modern battlefields.

Features of Stryker ICV:

- **Protection and Survivability:**
  - **Double V-Hull Design:** Improves blast resistance against landmines and IEDs.
  - **Composite Armour with Ceramic Tiles:** Provides enhanced ballistic protection from small arms fire and shrapnel.
- **Firepower and Combat Capabilities:**
  - **30 mm autocannon** (enhanced firepower for armoured threats).
  - **Optional 105 mm Mobile Gun System (MGS)** for anti-tank capabilities.
  - **Javelin Anti-Tank Guided Missile (ATGM) compatibility** (future upgrades may replace outdated versions).
- **Mobility and Deployment:**
  - **Top Speed**: 100 km/h.
  - **Range**: 483 km on a single refuel.
  - **All-Terrain Capability**: Performs well in **desert, jungle, and high-altitude terrains**.

Significance for India:

- **Improves mobility and protection** of Indian troops in **harsh Himalayan terrains**.
- Strategic deployment in **Ladakh and Arunachal Pradesh** strengthens India's position against **Chinese border threats**.
- The **Make in India initiative** will be supported through **co-production with Bharat Earth Movers Limited (BEML)**.
- Collaboration will likely involve **technology transfer**, reducing India's reliance on foreign defence suppliers.



TROPEX EXERCISE

Context

The 2025 edition of Indian Navy's Theatre Level Operational Exercise (TROPEX) is currently underway in the Indian Ocean Region.

About

- The exercise is conducted biennially and spans three months (January-March 2025).
- **Participants:** All operational Indian Naval units, along with Indian Army, Air Force, and Coast Guard assets.
  - Approximately 65 Indian Naval Ships, 9 Submarines, and over 80 Aircraft of various types are participating.
- **Objective:** The exercise has grown in scope and complexity over the years.
  - It focuses on coordinated planning, precise targeting, combat effectiveness, and credible joint operations.
  - It aims to validate the Indian Navy's core warfighting skills.
  - It also aims to ensure a synchronized, integrated response for national maritime security against conventional, asymmetric, and hybrid threats.

EXERCISE 'CYCLONE 2025'

Context

Exercise 'Cyclone 2025' began at the Mahajan Field Firing Range in Rajasthan.

About

- It is a **joint military exercise** between India and Egypt.
  - The first edition of the exercise was conducted in 2023 in India.
- It is a 14 day exercise which aims to enhance defence cooperation by sharing professional skills and improving interoperability of special forces in desert environments.

EXERCISE KOMODO

Context

The Indian Navy actively participated in Exercise Komodo, 2025.

About

- First launched in 2014.
- It is aimed at fostering maritime cooperation among friendly nations.
- It is a non combat multilateral naval exercise hosted by the Indonesian **Navy in Bali, Indonesia.**
- The exercise is held every two years between the Indian Ocean and the Pacific Ocean
- This aligns with India's **SAGAR** (Security and Growth for All in the Region) vision, strengthening maritime partnerships in the Indo-Pacific.
- Enhanced interoperability with **ASEAN Navies and QUAD partners.**

EXERCISE DHARMA GUARDIAN

Context

The 6th edition of India- Japan Joint Military Exercise DHARMA GUARDIAN has commenced in the East Fuji Manoeuvre Training area of Japan.

About

- First launched in 2018. It is an **annual event** conducted alternatively in India and Japan.
- The last edition was conducted in Rajasthan in 2024.
- **Aim:** To enhance interoperability between the two forces while undertaking joint urban warfare and counter-terrorism operations under **UN mandate**.
- **Significance:** The exercise underscores the shared commitment of India and Japan towards regional security, peace and stability, while advancing their common vision of a free, open and **inclusive Indo-Pacific**.

VERY SHORT-RANGE AIR DEFENCE SYSTEM (VSHORADS) BY DRDO

Context

DRDO conducted three successful flight trials of the Very Short-Range Air Defence System off the Odisha coast.

About

- **Type: 4th Generation** Man-Portable Air Defence System (MANPAD)
- **Development: Indigenously designed and developed** by DRDO's Research Centre Imarat (RCI).
- **Target Engagement:** Designed to **neutralize low-flying aerial threats**, including drones.

INS TAMAL

Context

The Indian Navy crew has arrived in St. Petersburg, Russia, for the commissioning of INS Tamal, a stealth-guided missile frigate under construction.

About

- A **Krivak-III class** stealth-guided missile frigate. The **last warship** to be commissioned outside India. **INS Tushil**, the first in this class, was commissioned in **December 2024.**
- **Key Features:** Capable of **air, surface, underwater, and electronic warfare**. **125 meters** in length with a **displacement of 3,900 tonnes**.

7 SCIENCE & TECHNOLOGY

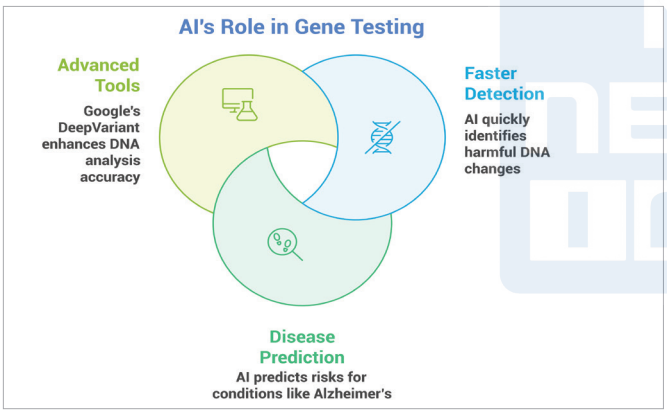
USE OF AI IN GENE TESTING AND ASSOCIATED CHALLENGES

Context

Experts warn that while AI improves genetic analysis, handling sensitive personal data increases the risk of leaks and misuse.

About Gene Testing:

- It is a type of medical test that looks at your DNA to find changes or variations in your genes. It can help identify if you have inherited certain genes that could increase your risk for diseases like cancer, heart disease, or genetic disorders such as cystic fibrosis.



Challenges of AI in Gene Testing

- **Biased Results** – AI trained on limited datasets may be inaccurate for diverse populations.
- **Privacy Risks** – Genetic data breaches, like the 2023 **23andMe hack**, raise security concerns.
- **Diagnostic Errors** – AI can misinterpret symptoms, leading to incorrect diagnoses in some cases.
- **Unclear Findings** – AI often detects **Variants of Unknown Significance (VUS)**, confusing doctors, especially in diseases like breast cancer.

GARBH-INI-DRISHTI DATA REPOSITORY

Context

The Department of Biotechnology has launched the GARBH-INi-DRISHTI data repository.

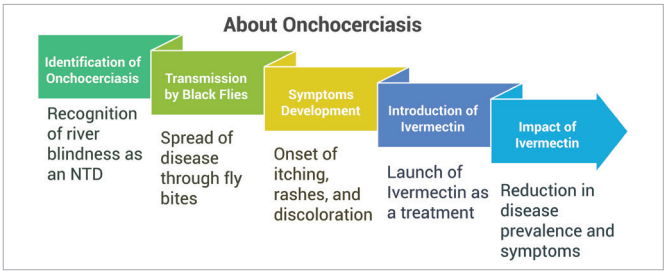
About

- GARBH-INi-DRISHTI is the Data Repository and Information Sharing Hub at Translational Health Science and Technology Institute (THSTI). It provides access to **clinical data, images, and biospecimens** collected from over 12,000 pregnant women, newborns, and postpartum mothers.
- **THSTI:** The newly inaugurated THSTI Ferret Research Facility, is a state-of-the-art establishment adhering to the highest biosafety and research standards.
  - It will serve as a crucial resource for vaccine development, therapeutic testing, and research into emerging infectious diseases.
- **Significance:** As one of South Asia's largest maternal and child health databases, GARBH-INi-DRISHTI will empower researchers worldwide to conduct transformative research aimed at improving maternal and neonatal health outcomes.

ONCHOCERCIASIS (RIVER BLINDNESS)

Context

The World Health Organization (WHO) declared Niger the first African nation to eliminate onchocerciasis (river blindness) as a public health threat.



- **Note:** As of now, WHO has verified **five countries as onchocerciasis-free** Colombia (2013), Ecuador (2014), Mexico (2015), Guatemala (2016), and Niger (2025)—the first in Africa.

US FDA APPROVES 'SUZETRIGNE': A NON-OPIOID PAINKILLER

Context

The U.S. FDA approved 'Suzetrigne,' a non-opioid painkiller, in January 2025, offering a safer alternative for pain management.

About Suzetrigne:

- It blocks pain signals before they reach the brain, unlike opioids, which numb pain in the brain.
- **Effect:** Pain remains at the injury site, but the brain doesn't perceive it.
- **Addiction Risk:** Does not induce pleasure or euphoria, making addiction or dependence less likely.

Comparison between Opioids vs. Non-Opioids

Aspect	Opioids	Non-Opioids
Definition	Derived from or mimic opium poppy substances.	Do not act on opioid receptors.
Examples	Oxycodone, Morphine, Heroin, Fentanyl	Acetaminophen, Ibuprofen, Aspirin
Primary Use	Moderate to severe pain relief	Mild to moderate pain, inflammation, fever
Mechanism	Bind to brain receptors, blocking pain and causing euphoria.	Reduce pain through anti-inflammatory action or signal blocking.

ROLE OF SRY GENE IN GENDER IDENTIFICATION

Context

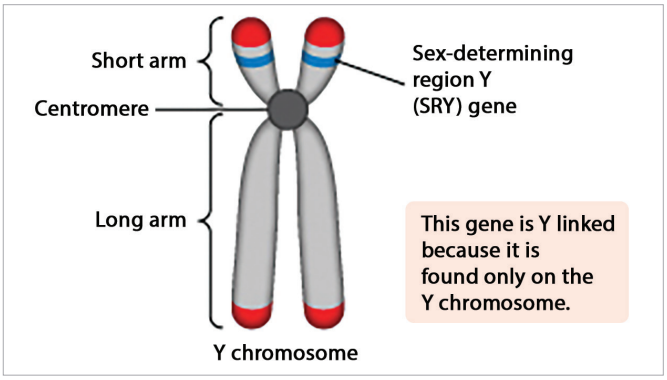
Recent studies have uncovered exceptional cases where individuals with the SRY gene have developed as females, highlighting the complexities of genetic influence on gender determination.

Mechanism of Sex Determination

- **Chromosomes:** Each human cell has **46 chromosomes, or 23 pairs**. One pair of these chromosomes is the sex chromosomes, which determine the sex of the individual.
  - **Female sex:** Females have two X chromosomes, or XX.
  - **Male sex:** Males have one X chromosome and one Y chromosome, or XY.
- **Fertilization:** When an egg is fertilized by sperm with an X chromosome, the resulting zygote will be female (XX). When an egg is fertilized by sperm with a Y chromosome, the resulting zygote will be male (XY).

About SRY Gene (Sex-determining Region Y)

- **The SRY gene** on the Y chromosome **determines if a baby will be male or female.**
- If the SRY gene is present, the baby will develop male characteristics and if the SRY gene is absent or mutated, the baby will develop female characteristics.
- The SRY gene produces a protein that attaches to DNA and controls the activity of other genes.
- The SRY protein starts processes that cause the fetus to develop male gonads (testes) and prevents the development of female reproductive structures.



Unusual Sex Development

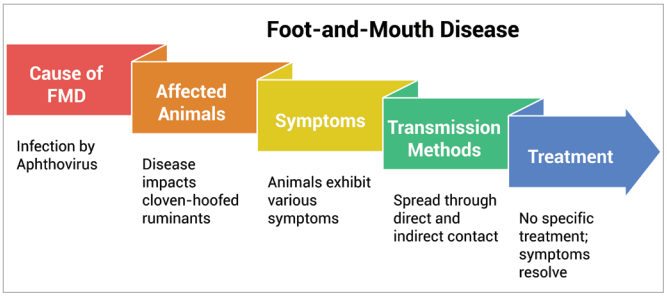
- In rare cases, an **SRY gene may be translocated** from the Y chromosome to the X chromosome.
  - If a baby inherits two X chromosomes, and one of them has the SRY gene, they usually **develop male characteristics** but are unable to have children.
  - However, there are rare cases where individuals with two X chromosomes and the **SRY gene develop as females.**
- **X Chromosome Inactivation:** If a woman has the "male" gene (SRY) on one of her X chromosomes, that specific X chromosome (the one with SRY) is the one that gets turned off.
  - This is because the SRY-carrying X is often missing other important genes, and turning it off prevents developmental issues.

FOOT AND MOUTH DISEASE

Context

Foot and Mouth Disease (FMD) is a highly contagious viral disease of livestock with a significant economic impact.

About



National Animal Disease Control Programme (NADCP)

- The Programme was launched in **2019** with a provision of 100% central assistance to states and Union Territories for Foot and Mouth Disease (FMD) vaccination.
- NADCP was included as a component under **Livestock Health and Disease Control programme (LHDCP) scheme** from **2021.**

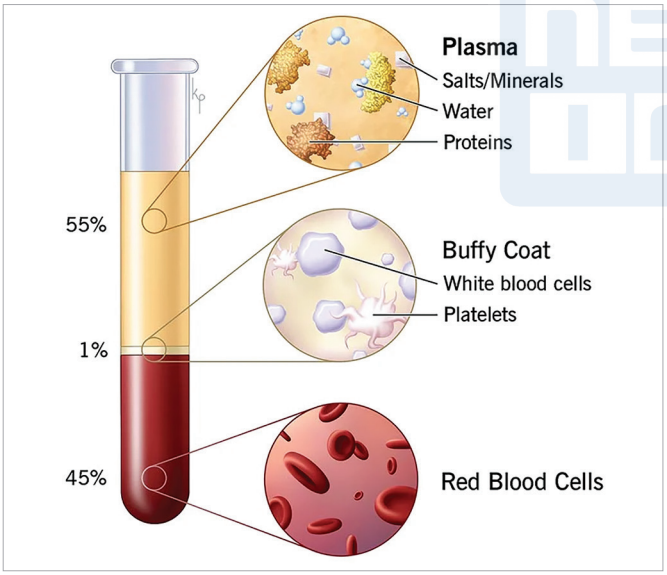
'BOMBAY' BLOOD GROUP

Context

A recent study published in Kidney International Reports highlights the success of this first-ever cross-blood transplant for a Bombay blood group patient, a procedure once considered impossible.

About

- A **blood group** is a classification system based on specific **antigens** present on the surface of **red blood cells**. It plays a crucial role in **blood transfusions** and **organ transplants**, ensuring compatibility between donors and recipients.



About Bombay Blood Group:

- The **Bombay blood group**, also known as **HH**, is an **extremely rare** blood type, predominantly found in **India and South Asia**.
- It was first identified in **Mumbai (formerly Bombay) in 1952** by **Y.M. Bhende**.
- The uniqueness of this blood group lies in the **absence of the H antigen**, which is typically required to form **A and B antigens**.
- As a result, individuals with this blood type **cannot receive blood from any ABO group** and can only accept donations from another **Bombay blood group** donor.

BLOOD GROUPS

	Type A	Type B	Type AB	Type O	Type Bombay O
Antigen (on RBC)	Antigen A	Antigen B	Antigen A + B	Antigen H	No Antigen
Antibody (in plasma)	Anti-B Antibody	Anti-A Antibody	Neither Antibody	Anti-A & Anti-B	Anti-A, Anti-B, and Anti-H
Cannot donate	O, B, Bombay O	O, A, Bombay O	O, A, B, Bombay O	Bombay O	-
Can donate	A, AB	B, AB	AB	O, A, B, AB	O, A, B, AB, Bombay O
Can receive	A, O	B, O	AB, A, B, O	O	Bombay O

- **Recent Medical Breakthrough:** In **2024**, a significant medical milestone was achieved when **a patient with the Bombay blood group successfully received a kidney transplant from his mother**, despite her having a different blood group. This groundbreaking **cross-blood transplant** was performed by doctors at **MIOT International, Chennai**.

WORLD'S 1ST HYBRID QUANTUM SUPERCOMPUTER

Context

Engineers in Japan have successfully activated Reimei, the world's first hybrid quantum supercomputer.

About

- The 20-qubit quantum computer has been seamlessly integrated into Fugaku, the world's sixth-fastest supercomputer, marking a significant milestone in high-performance computing.
- Unlike most quantum computers that rely on superconducting qubits, Reimei utilizes **trapped-ion qubits**—a technology that isolates charged atoms (ions) in an electromagnetic ion trap and uses lasers to precisely manipulate their quantum states.
- The integration of Reimei into Fugaku aims to tackle complex calculations that traditional supercomputers struggle with, particularly in physics and chemistry research.

EINSTEIN RING

Context

The European Space Agency's (ESA) Euclid space telescope has discovered an Einstein ring, around a galaxy nearly 590 million light-years away from Earth.

About Einstein Ring

- **An Einstein ring** is a circular formation of light caused by gravitational lensing, where a massive celestial object bends and magnifies light from a more distant object behind it.
  - **Gravitational lensing** is an example of Einstein's theory of general relativity.
- **Lensing Effect:** If the alignment between the observer, the foreground lens, and the background source is nearly perfect, the light from the background galaxy can be smeared into a ring.
  - In the recently observed Einstein ring, the galaxy **NGC 6505** acted as the gravitational lens.

Significance of Einstein Rings

- **Probing Dark Matter:** Dark matter, which makes up 85% of the universe's total matter, does not emit or absorb light, making it difficult to observe directly.
  - Einstein rings provide indirect evidence of dark matter's gravitational influence.
- **Understanding Distant Galaxies:** These rings help scientists study galaxies that would otherwise be too faint or distant to observe.
- **Insights into Cosmic Expansion:** The bending of light provides crucial data about the expansion of the universe, as the space between celestial bodies is continuously stretching.

BLACK HOLE 'GAIA BH3'

Context

Astronomers have recently identified Gaia BH3, a massive dormant black hole within the Milky Way galaxy.

About

- A dormant black hole, meaning it is not actively accreting material.
- The first black hole detected in the outer regions of the Milky Way.
- The largest known stellar-mass black hole in the Milky Way.
- Discovered in 2024 by the European Space Agency's (ESA) Gaia telescope.

About the Gaia Telescope:

- Has been **tracking the motions of billions of stars** since its launch in **2013** under ESA's **astrometry mission**.

ESA's Astrometry Mission – Gaia:

- **Objective:** To construct the most detailed 3D map of the Milky Way by precisely measuring the positions, distances, and motions of over one billion stars.

INDIRECT PROMPT INJECTION (IPI)

Context

The rise of indirect prompt injection as a major security threat to AI chatbots is a wake-up call for both developers and users.

About

- It embeds harmful instructions within benign-looking text (e.g., documents, emails, or web content). When processed by an AI LLM, these hidden prompts can lead to unauthorized actions, data breaches, and misinformation.

Significance

- AI models are trained to interpret and execute instructions—making them susceptible to hidden manipulations.
- Recent research demonstrated how Google's Gemini chatbot could be tricked into storing false information permanently.
- Attackers can bypass security safeguards, making traditional defenses ineffective.

PEROVSKITE-BASED LEDS (PeLEDs)

Context

Indian scientists at CeNS, Bengaluru, have developed an innovative method to enhance the stability of perovskite nanocrystals.

About

- Perovskite is a **class of compounds** with a crystal structure similar to **Calcium Titanate ($CaTiO_3$).**
- Perovskite-based LEDs (PeLEDs) are **light-emitting diodes** that use **perovskite nanocrystals** as the light-emitting material.
- They exhibit **high luminescence, emitting bright**, tunable light with superior color purity.
- They combine the **advantages of OLEDs (Organic LEDs) and QLEDs** (Quantum Dot LEDs) for high brightness, energy efficiency, and color tunability.

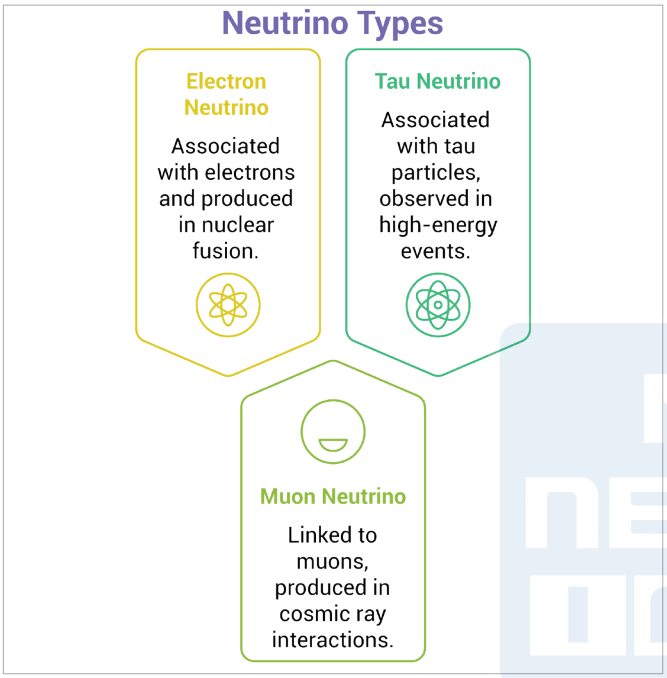
NEUTRINO DETECTED UNDER THE MEDITERRANEAN SEA

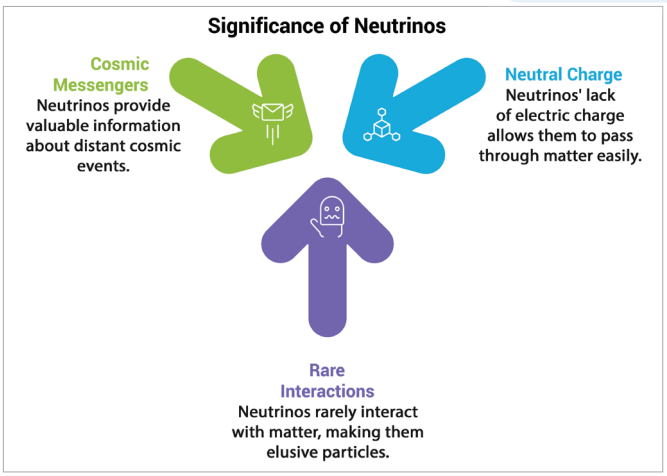
Context

Scientists detected a record-breaking ultra-high energy neutrino using an observatory under construction in the Mediterranean Sea near Sicily, part of the KM3NeT (Cubic Kilometre Neutrino Telescope) Collaboration.

About Neutrinos

- They are tiny elementary particles with very little mass, no charge, and a spin of half. They interact weakly with other matter particles and pass through our bodies unnoticed.
- **Sources of Neutrinos:** Neutrinos are produced in various astrophysical events, such as **nuclear fusion in stars (low-energy)** and violent processes like **black hole activity or gamma-ray bursts (high-energy).**
  - They can also be produced in labs.





DDOS CYBERATTACK ON KAVERI 2.0 PORTAL

Context

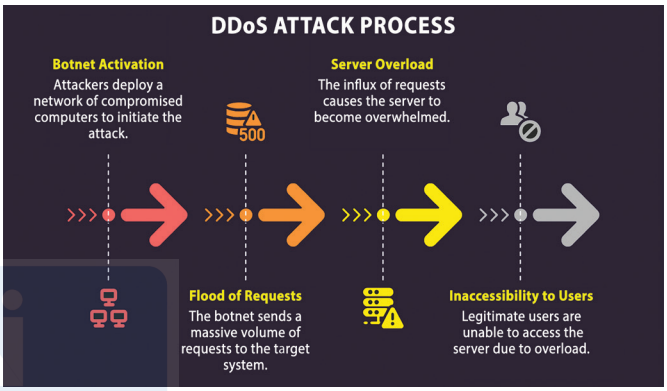
The Kaveri 2.0 portal in Karnataka experienced a DDoS cyberattack, resulting in service disruptions.

About

- **Kaveri 2.0** is an online property registration portal in **Karnataka** that facilitates **digital documentation and land record transactions**.

Meaning of Cybersecurity and DDos Attack:

- **Cybersecurity**: means protection of systems, networks, and digital assets from cyber threats like hacking, malware, phishing, and data breaches.
- A **Distributed Denial of Service (DDoS) attack**: It is a cyberattack that floods a system, network, or website with excessive traffic, causing it to slow down or crash.



Impact of a DDoS Attack:

- Disrupts services, leading to downtime for businesses or government platforms.
- Can cause **financial losses** or sabotage critical infrastructure.

INDIA'S FIRST AUTOMATED BIOMEDICAL WASTE TREATMENT PLANT

Context

The Union Minister inaugurated India's first indigenous Automated Biomedical Waste Treatment Plant at AIIMS New Delhi.

About

- The plant, named **"Srjanam,"** was developed by the Council of Scientific and Industrial Research – ***National Institute for Interdisciplinary Science and Technology (CSIR-NIIST).***
- **The plant disinfects pathogenic waste** such as blood, urine, sputum, and laboratory disposables without using incinerators.

Significance

- According to a **2023 report of the Central Pollution Control Board (CPCB)**, India generates **743 tonnes** of biomedical waste daily.
- The new technology offers an **alternative to traditional incineration**, reducing risks associated with exposure and environmental contamination.

MICROSOFT'S QUANTUM CHIP: 'MAJORANA 1'

Context

Recently, Microsoft has unveiled its groundbreaking quantum computing chip, Majorana 1, marking a significant leap in the field of quantum technology.

Meaning of Quantum Chip:

- It is a specialized microchip that contains quantum circuits designed to process information using **quantum bits (qubits)** instead of traditional binary bits (0s and 1s).
- These chips are the core components of **quantum computers**, which use the principles of quantum mechanics—such as **superposition, entanglement, and quantum interference**—to perform complex calculations much faster than classical computers.

Meaning of Key Terms

- **Superposition:** In quantum mechanics, **superposition** refers to the ability of a quantum system (such as a qubit) to exist in **multiple states at the same time** until it is measured.
  - ***Example:*** A classical computer bit can be **either** 0 or 1, but a **qubit** can be in a state that is both 0 and 1 **simultaneously**. This property enables quantum computers to process vast amounts of information in parallel.
- **Entanglement:** It is a quantum phenomenon where two or more particles become **interconnected** in such a way that the state of one particle **instantly influences** the state of the other(s), no matter how far apart they are.
  - This property allows quantum computers to perform computations with high efficiency and enables secure quantum communication (quantum cryptography).
- **Quantum Interference:** It occurs when quantum states **combine or cancel each other out**, similar to the way waves interfere in classical physics.
  - In quantum computing, interference is used to manipulate qubits in a way that amplifies the probability of correct answers and cancels out incorrect ones, leading to faster and more accurate calculations.

About Majorana 1 Chip:

- It uses a new class of materials called **topoconductors,** which enable the **creation of topological qubits (Topological Core Architecture)**.
  - These qubits are **more stable and less prone to errors** compared to traditional qubits.
- **Innovative Material Stack:** The chip is built using a combination of ***Indium Arsenide (a semiconductor) and Aluminum (a superconductor),*** creating a pristine environment for Majorana particles.

PROJECT WATERWORTH

Context

Meta has announced an ambitious undersea cable initiative called Project Waterworth to enhance global digital connectivity.

About

- It is an **AI-powered subsea cable system**, spanning 50,000 km across five continents (Asia,Africa,North America, South America and Australia).
- It is the longest and highest-capacity **subsea cable system**, linking the **U.S., India, Brazil, South Africa, and other key regions.**
- The cables will be laid at **depths of up to 7,000 meters** in deep waters and advanced burial techniques in high-risk shallow waters will protect the cables from ship anchors and environmental hazards.
- **Greater connectivity** will enhance international cooperation, digital inclusion, and technological advancements.

Submarine Cables

- **Technology:** Modern submarine cables use **fiber-optic technology**, where lasers transmit data through thin glass fibers at high speeds.
- **Structure**: The glass fibers are protected by **layers of plastic and steel** for durability. Cables near the shore have extra layers of armoring.
- **Thickness**: Most cables are about **the width of a garden hose**, while the actual fibers inside are as thin as a **human hair**.
- **Placement**: Cables **lie on the ocean floor**, with those near the shore buried under the seabed for protection.
- **Global Coverage**: As of early 2025, there are **over 1.48 million kilometers** of submarine cables worldwide.
- **Cable Distribution**: More cables exist where there is **high data demand** (e.g., between North America, Europe, and Asia). Some routes, like **Australia to South America**, have few or no cables due to low data traffic.

FIRST IN-WOMB TREATMENT FOR SPINAL MUSCULAR ATROPHY (SMA)

Context

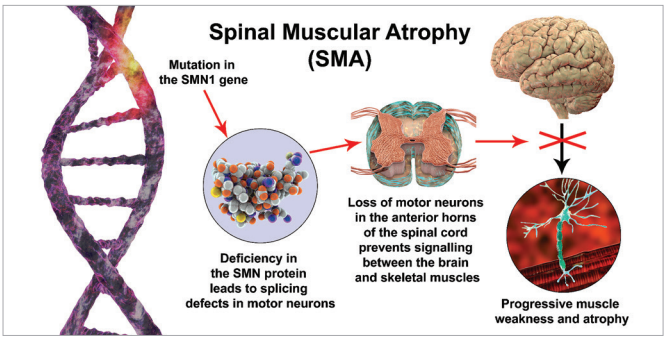
For the first time, scientists have successfully treated a fetus diagnosed with Spinal Muscular Atrophy (SMA), marking a historic breakthrough in in-womb treatment for genetic disorders.

Abbout

- Spinal Muscular Atrophy (SMA) is a genetic disorder that leads to muscle weakness by affecting motor neurons, which control movement.
- It is caused by mutations in the **SMN1** gene, resulting in a deficiency of the **Survival Motor Neuron (SMN) protein**, which is crucial for nerve function. Due to the lack of signals from the brain, muscles progressively weaken and waste away.
- The most severe form, **SMA Type 1**, leads to rapid motor function decline, with affected infants rarely surviving beyond two to three years.
- SMA occurs in approximately **1 in 10,000 births**, making it one of the leading genetic causes of infant mortality.

About the In-Womb Treatment:

- Scientists have used an oral drug called **Risdiplam** to slow the progression of SMA. This drug is typically administered shortly after birth, as early treatment significantly improves outcomes.
- In a groundbreaking new trial, researchers administered the drug **before birth** for the first time, aiming to halt the disease even earlier.



NASA'S SPHEREx

Context

NASA is tentatively scheduled to launch its new megaphone-shaped space telescope called Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer (SPHEREx).

About

- It is a **two-year space mission** designed to survey the sky in **optical and near-infrared light**. This wavelength is invisible to the human eye but is crucial for studying the universe.
- **Scientific Goals**: SPHEREx will collect data on **over 450 million galaxies** and **100 million stars** in the **Milky Way**.
  - It will study galaxies across cosmic history, including some so distant that their light has traveled for **10 billion years** before reaching Earth.
  - Within our galaxy, it will search for **water and organic molecules** in **stellar nurseries** (where stars form) and **protoplanetary disks** (where planets may be forming).
- **Survey Method**: Every **six months**, SPHEREx will **map the entire sky** using **102 different color bands**, significantly improving previous all-sky surveys.
  - It will use technology adapted from **Earth satellites and interplanetary spacecraft** to ensure high precision.
- **Astronomical Importance**: The data from SPHEREx will help astronomers identify **promising targets** for future missions like **NASA's James Webb Space Telescope** and the **Wide Field Infrared Survey Telescope**, allowing for more detailed studies.
- **PUNCH Mission:** SPHEREx will launch alongside NASA's PUNCH mission, which studies the Sun's solar wind.
  - PUNCH consists of four small satellites in low Earth orbit.
  - It will make 3D global observations of the inner heliosphere to understand how the Sun's corona becomes the solar wind.
  - The satellites will map the transition zone where the Sun's corona turns into solar wind.

8 SOCIETY

BHOPAL PROHIBITS BEGGING

Context

Recently, the Bhopal district administration imposed a ban on all forms of begging, giving alms, and purchasing goods from beggars, invoking Section 163 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023.

About

- **Census 2011 Data on Beggars**
  - According to **Census 2011**, India has **4.13 lakh beggars and vagrants** spread across rural and urban areas.
  - The data highlights **socio-economic vulnerabilities** that force individuals into begging due to **poverty, lack of employment, and social exclusion**.
- **Legal Provisions Concerning Begging**
  - **Article 23 of the Indian Constitution**: Prohibits human trafficking, begar (forced labour), and all other forms of exploitation.
  - **Section 163 of BNSS (Bharatiya Nagarik Suraksha Sanhita), 2023**: Empowers the District Magistrate to direct any person to abstain from an act that may threaten human life or public tranquility.
- **State Legislations on Begging**
  - **Bombay Prevention of Begging Act (BPBA), 1959**: One of the first laws criminalizing begging, adopted by several states and UTs.
  - **Rajasthan Rehabilitation of Beggars or Indigents Act, 2012**: Focuses on identification, rehabilitation, and vocational training for beggars.
- **Court Judgements on Begging Laws**
  - ***Harsh Mander Case (2018), Delhi High Court:***
    - Struck down parts of the **BPBA, 1959**, which criminalized begging.
    - Declared that **penalizing beggars violates their dignity and fundamental rights** under **Article 21 (Right to Life)**.
  - ***Supreme Court Ruling (2021):*** Dismissed a PIL seeking to remove beggars from public spaces, stating that begging is a socio-economic issue, not a crime.
- **Historical Context: Colonial Legacy**
  - ***Criminal Tribes Act, 1871:***
    - Labeled **nomadic and vagrant communities** as "criminal tribes," associating them with begging.
    - This stigmatization continued in post-independence laws like the **BPBA, 1959**.
  - ***Legal Status of Beggary Laws Today:***
    - **No central law criminalizes begging**, but multiple states still enforce **beggary prevention acts** based on the BPBA model.
    - The **Concurrent List (Entry 15) of the Indian Constitution** allows **both Union and State governments** to legislate on **vagrancy, nomadic and migratory tribes**, including begging.
- **Government Initiatives for Rehabilitation**
  - ***SMILE Scheme (Support for Marginalized Individuals for Livelihood and Enterprise)***
    - Launched in **2022** by the **Ministry of Social Justice and Empowerment**.
    - Aims to **rehabilitate beggars by providing medical care, education, and skill development**.
    - **970 individuals rehabilitated**, including **352 children**.
    - The goal is to achieve a **"beggar-free" India by 2026**.
  - ***Central Sector Scheme for Comprehensive Rehabilitation of Persons Engaged in Begging:*** A sub-scheme under SMILE, focusing on:
    - Shelter homes for beggars.
    - Vocational training to integrate them into the workforce.
    - Healthcare and social security benefits.

SEXUAL EQUALITY PART OF SCHOOL SYLLABUS

Context

The Supreme Court recently emphasized that sexual equality, along with moral and ethical training on respectful behavior towards women, must be integrated into the school curriculum.

About

- **Sexual equality**, also known as **gender equality**, refers to the principle that individuals of all genders should have equal rights, opportunities, and treatment in all aspects of life, including social, economic, political, and cultural spheres.
  - It implies the absence of discrimination based on sex, gender identity, or sexual orientation.
- **Key Aspects of Sexual Equality:**
  - **Equal Rights:** Ensuring that all genders have the same legal rights and protections, including in areas such as property, inheritance, and personal safety.

- **Equal Opportunities:** Providing equal access to education, employment, healthcare, and other essential services, regardless of gender.
- **Equal Pay:** Addressing wage disparities and ensuring equal remuneration for equal work, irrespective of gender.
- **Freedom from Gender-Based Violence:** Eliminating violence, harassment, and discrimination based on sex or gender identity.
- **Representation and Participation:** Ensuring fair representation and participation of all genders in political and decision-making processes.
- **Reproductive Rights and Health:** Supporting the right to make decisions about one's own body and providing access to reproductive healthcare.
- **Social and Cultural Equality:** Challenging stereotypes and biases that perpetuate discrimination and hinder progress towards equality.

Need for Sexual Equality

- **Address Deep-Rooted Patriarchy:** India continues to grapple with gender biases that limit opportunities for women in various fields.
- **Economic Participation**: Gender disparity in education and employment contributes to lower economic growth.
  - **Gender Gap in Education:** As per NFHS-5, **70.3% of females are literate,** compared to 84.7% of males.
  - **Labor Force Participation:** In India, only around **37%** of women aged 15 years and above participate in the workforce (compared to about 73% of men).
- **Constitutional Mandate:** Articles **14, 15, and 21** of the Indian Constitution uphold gender equality, and integrating it into education aligns with these principles.
- **Gender-Based Violence:** Educating children on gender equality from an early age can help reduce incidents of gender-based violence, harassment, and discrimination.

Challenges to Achieving Sexual Equality

- **Deep-Rooted Patriarchy:** Societal norms and traditional biases reinforce gender stereotypes, limiting opportunities for women.
- **Educational Gaps:** Lack of gender-sensitive curricula and inadequate teacher training hinder effective implementation of gender equality education.
- **Workplace Disparities:** Wage gaps, underrepresentation in leadership roles, and gendered career preferences continue to perpetuate inequality.
- **Violence Against Women:** Sexual harassment, domestic violence, and crimes against women persist despite legal frameworks aimed at protection and justice.
- **Digital and Media Influence:** Objectification of women in media and unchecked cyber abuse contribute to gender biases.

Global Efforts Towards Sexual Equality

- **United Nations Sustainable Development Goal 5:** Aims to achieve gender equality and empower all women and girls.
- **Beijing Declaration and Platform for Action (1995):** The resolution adopted by the United Nations in 1995 outlines key commitments for gender equality worldwide.
- **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW):** Encourages policy reforms and legal protection against gender discrimination.

National Efforts Towards Sexual Equality

- **Beti Bachao Beti Padhao (BBBP):** Promotes awareness and education of the girl child to combat gender biases.
- **National Education Policy (NEP) 2020:** Recognizes gender inclusion as a key priority and promotes sensitization programs.
- **Nirbhaya Fund:** Supports initiatives to ensure women's safety and security.
- **Digital Literacy Programme for Women:** It is part of Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) and **empowers women to access e-governance services and financial platforms**, helping them participate in the digital economy**.**
- **One Stop Centre Scheme (Sakhi Centres),** aims to facilitate women affected by violence with a range of integrated services under one roof such as Police facilitation, medical aid, legal aid and legal counseling, psycho-social counseling, temporary shelter, etc.

Legal Reforms and Protections:

- **Decriminalization of Homosexuality:** In **Navtej Singh Johar v. Union of India (2018)**, Section 377 of the IPC was read down, decriminalizing consensual homosexual acts.
- **Protection Against Violence:** The **Protection of Women from Domestic Violence Act, 2005** and **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013** safeguard women's rights.
- **Transgender Rights:** The **Transgender Persons (Protection of Rights) Act, 2019** provides rights and welfare measures for the transgender community.

WORLD DAY OF SOCIAL JUSTICE

Context

Recently, the United Nations observed World Day of Social Justice on February 20th, highlighting the importance of promoting equality, fairness, and social inclusion.

About

- **Established by UNGA:** It was established by the United Nations General Assembly (UNGA) during the **62nd session on November 26, 2007.**
- **Focus**: On addressing poverty, exclusion, unemployment, and promoting solidarity, equality, and opportunity.
- **Aligned with UN Initiatives:** Aligned with the UN's mission, including the Social Protection Floor launched in 2009, ensuring basic social guarantees for all.

Evolution of Social Justice in India

- **World Day of Social Justice (2009):** India has observed this day since 2009, symbolizing its commitment to social justice.
- **Independence Movement Influence:** Social justice in India has roots in the struggle for independence, which laid the groundwork for equality, dignity, and justice.
- **Key Constitutional Provisions:**
  - **Preamble:** Ensures social, economic, and political justice, guarantees equality, and promotes fraternity for national unity.
  - **Fundamental Rights (Part III):**
    - ***Article 23:*** Prohibits human trafficking and forced labor.
    - ***Article 24:*** Bans child labor in hazardous occupations.
  - **Directive Principles of State Policy (Part IV):**
    - ***Article 37:*** Highlights the importance of DPSPs in governance.
    - ***Article 38:*** Directs the State to reduce inequalities.
    - ***Article 39:*** Promotes equal livelihood, fair wages, and protection from exploitation.
    - ***Article 39A:*** Guarantees free legal aid.
    - ***Article 46:*** Focuses on education and economic upliftment for SCs, STs, and weaker sections.
- **Ministry of Social Justice & Empowerment:** In 1985-86, the Ministry of Welfare was bifurcated into the Department of Women & Child Development and the Department of Welfare, incorporating divisions from the Ministries of Home Affairs and Law.
  - It was later renamed the Ministry of Social Justice & Empowerment in May 1998.
  - **Key focus Areas:** education, economic support, rehabilitation, and empowerment.
  - **Targeted Community Welfare:** Focuses on uplifting SCs, OBCs, senior citizens, victims of substance abuse, transgender persons, DNTs, and EWS through policies and initiatives promoting equity and inclusion.
  - **Union Budget 2025-26:** Allocation of Rs 13,611 crores for MoSJE, reflecting a 6% increase for welfare schemes aimed at empowering marginalized communities.

Key Initiatives by the Government of India

- **Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY):** It merges 3 schemes for skill development, income generation, and infrastructure in SC-dominated villages.
- **Three Components:** Adarsh Gram development, Grants-in-Aid for socio-economic projects and Hostel construction in higher education institutions.
- **Scheme for Residential Education for Students in High Schools (SRESHTA):**
  - Provides financial assistance for SC students in classes 9-12 in high-quality residential schools.
  - Supports CBSE/State Board-affiliated private schools and NGOs/VOs running residential/non-residential schools and hostels.
  - Aims to bridge service gaps and promote socio-economic upliftment of SC communities.
- **Purple Fests (Festival of Inclusion):** Organized by DEPwD, Ministry of Social Justice & Empowerment since 2023.
  - In 2024, over 10,000 Divyangjan and their escorts participated.
- **Nasha Mukt Bharat Abhiyan (NMBA, 2020):** Aims to make India drug-free by targeting 272 high-risk districts.
  - Follows a three-pronged approach: supply reduction (NCB), demand reduction (MoSJ&E), and treatment (Health Dept).
  - Reached 13.57 crore people, including 4.42 crore youth and 2.71 crore women, with participation from 3.85 lakh educational institutions.
- **PM-DAKSH Yojana (2021):**
  - Aims to enhance skill levels of marginalized communities (SCs, OBCs, EBCs, DNTs, Safai Karamcharis) for economic empowerment.
  - Provides free short-term and long-term training with a ₹450.25 crore budget (2021-26).
  - Ensures at least 70% placement in wage/self-employment, targeting individuals aged 18-45.
- **SMILE Scheme:**
  - Focuses on the rehabilitation of transgender individuals and people engaged in begging.
  - Aims to create a "Begging-free India" through surveys, awareness campaigns, shelter homes, skills training, alternative livelihoods, and SHG formation.
  - Active in 81 cities, with plans to expand to 50 more cities.
- **NAMASTE Scheme (2023-24):**
  - A joint initiative by MoSJ&E and MoHUA to ensure safety, dignity, and livelihood for sanitation workers in urban India.
  - Integrates the Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS) and expands coverage to waste pickers from FY 2024-25.

9 CULTURE & HISTORY

SANT GURU RAVIDAS

Context

Recently, Prime Minister Narendra Modi paid tributes to Sant Guru Ravidas on the occasion of his birth anniversary.

About

- **Early Life**
  - Born in **Seer Govardhanpur, Uttar Pradesh**, his birthplace is now a major pilgrimage site called **Shri Guru Ravidas Janam Asthan**.
  - Despite coming from a **humble background**, he gained recognition for his **spiritual wisdom and teachings on human rights and equality**.
  - He was a **disciple of Ramananda**, a revered Bhakti poet of the time.
- **Philosophy & Teachings**
  - Guru Ravidas **strongly opposed caste discrimination** and **untouchability**, advocating for **social justice and equality**.
  - His teachings emphasized **gender equality and spiritual liberation**, making him a key social reformer of his time.
  - He rejected **saguna (deity-based) worship** and instead promoted **nirguna bhakti (worship of the formless divine)**.
  - **Meera Bai**, the famous Hindu mystic poet, is believed to have considered **Guru Ravidas as her spiritual guide**.
- **Influence & Literary Contributions**
  - **41 of his hymns and devotional songs** are included in the **Guru Granth Sahib**, the holy scripture of Sikhism.
  - His teachings inspired the **Ravidassia religion**, whose followers treat him as a saint and a spiritual leader.
- **Contributions to the Bhakti Movement**
  - **Guru Ravidas was a prominent saint of the Bhakti movement**, known for his devotional songs and verses that promoted love, devotion, and equality.
  - He **focused on the Nirguna (formless) concept of the divine**, rejecting idol worship and advocating a personal connection with God.
- **Recognition**
  - Guru Ravidas is also known by other names such as **Raidas, Rohidas, and Ruhidas**.
  - His message of **universal brotherhood and equality continues to inspire millions**.

THAIPUSAM

Context

The Prime Minister Shri Narendra Modi greeted on the occasion of Thaipoosam.

About

- **Background**
  - The name **"Thaipusam"** is derived from **"Thai"** (the Tamil month) and **"Poosam"** (the star that reaches its peak during the festival).
  - It is a **Hindu festival honoring Lord Murugan** (also known as Lord Kartikeya), the god of **war, victory, and wisdom**.
  - The festival symbolizes **courage, determination, and spiritual growth**.
- **Mythological Connection**
  - Thaipusam commemorates the event when **Goddess Parvati gifted the divine "Vel" (spear) to Lord Murugan**.
  - With this weapon, Murugan defeated the **demon Surapadma**, signifying the triumph of **good over evil**.
- **When & How It Is Celebrated**
  - Thaipusam is observed on the **full moon day** in the Tamil month of **Thai** (January–February).
  - It is **widely celebrated by the Tamil community**, especially in **Tamil Nadu, Sri Lanka, Singapore, and Malaysia**.
  - Devotees express their devotion through **prayers, fasting, carrying "kavadi" (burdens), and body piercings** as acts of penance and gratitude.

DHIMSA DANCE

Context

Recently, Tribal families in Neelabandha celebrated their first electricity supply since Independence with the 'Dhimsa' dance.

About

- **Performed by Tribes**: Popular among tribal communities like Bagata, Valmiki, Poraja, Khond, Gadaba, Kondadora, Mukadora, and Kotia, primarily in the hilly regions of Andhra Pradesh.
- **Occasions**: Traditionally performed during festivals, weddings, and the annual hunting festival in April, where men and women dance for hours in celebration.

- **Varieties**: There are **12 types of Dhimsa**, each with distinct movements and expressions. The dance originated in the **Koraput region**, home to the **Ghond tribe**, and has been passed down through generations.
- **Themes**: The dance portrays **tribal mythology, folktales, traditions, economic life, kinship, and marital customs**, reflecting the community's cultural richness.
- **Instruments Used**: Traditional instruments like ***Dappu (drum), Tudumu (hand drum), Mori (wind instrument), Kidgi, Gilka, and Jodukommulu (bells)*** provide rhythmic beats.
- **Dance Formation**: The dancers form **small or large circles**, linking arms behind each other's backs, and move their **hands and legs in synchronized patterns**, creating an energetic and coordinated performance.

FOLK DANCE MAP OF INDIA

DOKRA ARTWORK

Context

Recently, Prime Minister Modi presented French President Emmanuel Macron with a traditional Dokra artwork showcasing musicians playing Indian instruments.

About

- **Overview**
  - **Dokra (Dhokra)** is a **centuries-old metal-casting craft** primarily practiced in **Chhattisgarh, Jharkhand, Odisha, West Bengal, and Telangana**.
  - It employs the **lost-wax casting technique**, dating back **over 4,000 years**.
  - One of the **earliest known examples** is the famous **Dancing Girl of Mohenjo-Daro** from the Harappan Civilization.

- **Origins**
  - The name **"Dokra"** comes from the **Dhokra Damar tribe**, traditional metal smiths from **West Bengal**.
  - The craft has spread across **Jharkhand, Odisha, Chhattisgarh, Rajasthan, and even Kerala**.
  - Different regions have **distinct styles and workmanship**, making each piece unique.
- **Crafting Process:** Lost-Wax Casting
  - **Lost-wax casting** is a **one-time moulding process**, meaning **each piece is unique** and cannot be replicated.
  - **Steps involved:**
    - **Wax Model Creation** – Artists shape the design in beeswax.
    - **Clay Moulding** – The wax model is covered with layers of clay.
    - **Melting the Wax** – The mould is heated, melting the wax and leaving a hollow shape.
    - **Molten Metal Casting** – Molten brass or copper is poured into the mould.
    - **Finishing** – After cooling, the mould is broken, revealing the final sculpture.
- **Features & Unique Aspects**
  - **Handcrafted without joints**, giving the artifacts a seamless look.
  - Made from **brass, copper, and bell metal**.
  - Each piece **takes about a month to make** due to intricate detailing.
  - **Nature-inspired motifs** – common designs include animals, deities, human figures, and tribal themes.
- **Challenges & Revival Efforts**
  - **Time-consuming process** and **high production costs** affect profitability.
  - **Limited market access** for tribal artisans.
  - **Government & NGO initiatives** are working to **promote and preserve** Dokra art.
  - **Geographical Indication (GI) Tag** granted to **Dokra from Chhattisgarh** to protect its authenticity.

MAHARISHI DAYANAND SARASWATI

Context

Recently, PM paid tributes to Maharishi Dayanand Saraswati on his birth anniversary.

About

- **Early Life**
  - Born as **Mool Shankar Tiwari** on **12th February 1824** in **Tankara, Gujarat**, into an **orthodox Brahmin family**.
  - His parents, **Lalji Tiwari and Yashodabai**, were devout followers of Hindu traditions.
  - From a young age, he developed a **deep interest in spiritual knowledge** and questioned **idol worship, rituals, and superstitions**.
  - At **19**, he renounced worldly life and **wandered for nearly 15 years** (1845–1860) as an ascetic in search of truth.
  - Studied under **Swami Virjanand** in Mathura, who encouraged him to **purge Hinduism of corrupt practices** and restore the **true essence of the Vedas**.
- **Philosophy & Social Reforms**
- Opposed idol worship, untouchability, caste-based discrimination, polygamy, child marriage, and gender inequality.
  - Advocated a **classless, casteless society** where **caste was based on merit, not birth**.
  - Strongly supported **women's education, widow remarriage, and the upliftment of oppressed classes**.
  - Led the **Shuddhi movement** for reconversion and fought for the **abolition of Sati and child marriage**.
  - His ideology, **"Back to the Vedas,"** emphasized that true Hinduism is **rational, egalitarian, and rooted in the Vedas**.
  - Authored **Satyarth Prakash (The Light of Truth),** condemning **social evils like infanticide and dowry** while advocating **Vedic wisdom**.

- **Educational Contributions**
  - Championed **modern, scientific, and Vedic education** while opposing the **British colonial education system**.
  - Inspired the establishment of **Gurukulas, Girls' Gurukulas, and Dayanand Anglo-Vedic (DAV) schools and colleges** in **1886**. The **first DAV school** was set up in **Lahore** under **Mahatma Hansraj**.
- **Role in Nationalist Movement**
  - First to give the call for **"Swaraj"** in **1876**, influencing leaders like **Bal Gangadhar Tilak, Lala Lajpat Rai, and Mahatma Gandhi**.
  - Promoted **Swadeshi (economic self-reliance), cow protection, and Hindi as a national language**.

SWAMI RAMAKRISHNA PARAMHANSA

Context

Recently, PM honored Swami Ramakrishna Paramhansa on his Jayanti, recognizing his spiritual teachings and profound influence on Indian philosophy and culture.

About

- **Early Life**
  - Born as **Gadadhar Chattopadhyaya** on **February 18, 1836**, in **Kamarpukur, Bengal**.
  - From a young age, he displayed profound **spiritual inclination and divine visions**.
  - Later became a priest at the **Dakshineswar Kali Temple**, dedicating his life to **worshipping Goddess Kali**.
- **Religious Philosophy & Teachings**
  - Practiced **multiple spiritual disciplines**, including:
    - **Tantric traditions** (focused on spiritual transformation).
    - **Bhakti movement** (devotion-based worship).
    - **Vaishnavism** (worship of Lord Vishnu and his avatars).
    - **Advaita Vedanta** (philosophy of non-dualism).
  - Advocated **religious harmony**, teaching that **all faiths lead to the same ultimate truth**.
    - Encouraged **direct spiritual experience** over rigid rituals.
- **Spreading His Legacy**
  - His **foremost disciple, Swami Vivekananda**, played a pivotal role in **popularizing his teachings**.
  - In **1897**, Swami Vivekananda **founded the Ramakrishna Mission**, dedicated to **spirituality, education, and social service**.
  - The mission expanded Ramakrishna's teachings **across India, America, and Europe**.
- **Documentation of Teachings:** Mahendranath Gupta, a devoted disciple, compiled Ramakrishna's teachings in:
  - Sri Sri Ramakrishna Kathamrita (Bengali).
  - The Gospel of Sri Ramakrishna (English, 1942).

900-YR-OLD KALYANA CHALUKYA-ERA INSCRIPTIONS UNEARTHED

Context

Recently, a 900-year-old Kannada inscription from the Kalyana Chalukya dynasty was discovered in Gangapuram, a temple town in Telangana.

About

- **Inscriptions**
  - These inscriptions belong to the reign of **Emperor Someswara-III Bhulokamalladeva** of the **Kalyana Chalukya dynasty**. They provide historical insights into temple construction and patronage:
  - **First Inscription**: Records the **construction of the Bijjeswara temple** and donations by a **local village chief**.
  - **Second & Third Inscriptions**: Document **grants and donations** made to the temple, highlighting religious patronage.
  - **Chalukya Dynasty (6th–12th Century CE):** The Chalukyas ruled large parts of southern and central India and evolved into three major branches:
- **Badami Chalukyas (6th–8th Century CE)**
  - The **earliest Chalukya rulers** with their capital at **Badami (Vatapi)** in present-day Karnataka.
  - **Pulakeshin II**, their most notable ruler, expanded the empire and **defeated Harsha of Kanauj**.
  - The dynasty emerged after the decline of the **Kadamba kingdom of Banavasi**.
- **Eastern Chalukyas (7th–11th Century CE)**
  - Established after **Pulakeshin II's death**, ruling the **eastern Deccan** from **Vengi (modern Andhra Pradesh)**.
  - They **ruled until the 11th century**, before merging with the **Chola Empire**.
- **Western Chalukyas (Kalyani Chalukyas) (10th–12th Century CE)**
  - **Descendants of the Badami Chalukyas**, who emerged in the **late 10th century**.
  - Their **capital was Kalyani (modern Basavakalyan, Karnataka)**.
  - They were known for their **wars against the Cholas and other rival kingdoms**.
- **Kalyani Chalukyas (Western Chalukyas)**
  - ***Dynasty and Capital***
    - The **Kalyani Chalukyas**, also called the **Western Chalukyas**, were a **Kannadiga dynasty**.
    - Their capital was **Kalyani** (modern-day **Basavakalyan, Karnataka**).
  - ***Establishment***
    - Founded by **Tailapa II** in the **late 10th century**.
    - Ruled the **western Deccan and southern Indian peninsula** for **about 300 years**.
    - Reached their **peak under Vikramaditya VI**, marking the **'Chalukya Vikrama Era'** in Karnataka's history.

- **Rule of Vikramaditya VI (1076–1126 CE)**
  - **Most powerful ruler** of the Kalyani Chalukyas.
  - Controlled important **feudatories**, including:
    - Kadamba Jayakesi II of Goa
    - Silhara Bhoja
    - The Yadava King
  - Ensured **stability and territorial expansion**, making **Chalukya rule one of the most significant in Karnataka's history**.
- **Decline of the Kalyani Chalukyas**
  - After **Vikramaditya VI's death**, the dynasty **weakened due to constant conflicts** with the **Cholas**.
  - Continuous wars led to **resource depletion** and **loss of territory**.
  - By the **12th century**, the **Hoysalas and Yadavas (Seunas)** replaced their dominance.
- **Contributions to Art, Architecture, and Culture**
  - ***Literature***
    - The **Chalukyas of Kalyani** played a significant role in the development of **Kannada and Telugu literature**.
    - Patronized scholars and poets, enriching the **cultural landscape of South India**.
  - ***Architecture – 'Gadag Style'***
    - Developed a **distinct architectural style**, acting as a bridge between:
    - Badami Chalukya architecture (8th century)
- **Hoysala architecture (13th century)**
  - Key features of **Gadag-style temples** include:
    - Intricate carvings and ornamental sculptures.
    - Kirtimukha Makaras (mythical sea creatures).
    - Mithuna figures (erotic sculptures).
  - Highly detailed pillars and doorways.
- **Coinage**
  - The **Western Chalukyas** minted **punch-marked gold coins** called **'Pagodas'**.
  - These coins featured **Kannada inscriptions**, reflecting the dynasty's **cultural identity**.

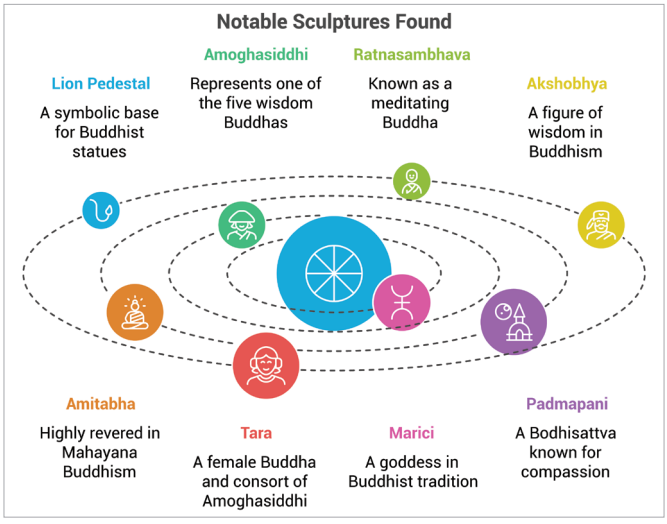
RELICS OF RATNAGIRI: BUDDHIST HERITAGE

Context

Recently, archaeologists uncovered a 1.4-meter-tall Buddha head along with 1,500-year-old tablets and stupas at Ratnagiri, Odisha, in December 2023.

About

- **Historical Background**
  - The earliest Buddhist settlement at **Ratnagiri** dates back to the **5th century AD**, based on sculptural and epigraphic evidence.
  - It **flourished until the 13th century**, but its significance declined over time, leading to abandonment.
  - Despite this decline, **Buddhist activities persisted in the area until the 16th century**.
  - Various **historical records, inscriptions, and literary evidence** document Ratnagiri's importance as a **major Vajrayana (Tantric Buddhism) center**.
  - A **copper plate charter of Somavamsi King Karna**, discovered during excavations, confirms its historical significance.
- **Excavations**
  - The site was identified as **Ratnagiri** through seals bearing the inscription: **"Sri Ratnagiri Mahavihara Arya Bhikshu Sangha."**
  - **Excavations have uncovered:**
    - **Three sculpted heads** of varying sizes.
    - A **monolithic elephant sculpture**.
    - **Hundreds of votive stupas**, ranging from simple to highly ornamented.
    - **Brick and stone masonry structures**, demonstrating advanced craftsmanship.
  - Smaller **stone-carved votives**, arranged in a sequence, indicate Vajrayana practices related to **offerings upon the fulfillment of wishes**.
- **Scriptural and Artistic Discoveries**
  - **Stone tablets inscribed in Sanskrit** using the **Kutila script (Siddhamatrika)** were discovered.
  - A significant **ceramic assemblage**, mainly **fine grey ware**, was found in different shapes and sizes.
  - **Niches in votive stupas** likely housed male and female **Buddhist deities**, reinforcing Ratnagiri's role in Vajrayana Buddhism.



- **Architectural Significance**
  - **Ratnagiri comprises two monasteries** where Buddhist followers lived, meditated, and studied.

- A **massive stupa** at the site symbolizes Buddhist **veneration and devotion**.
- The presence of **well-preserved bricks** demonstrates the advanced brick-making skills of the period.
- Unlike other sites nearby, **Ratnagiri does not have a typical chaitya griha** but features a **shrine complex of a different shape**, confirmed by:
  - The **arrangement of votive stupas** in a specific sequence.
  - Structural remains indicating **multiple phases of construction**.
- Archaeological research is **still in its early stages**, with ongoing efforts to **decode the site's full significance**.

Odisha and Buddhism

- **Mauryan Emperor Ashoka (304-232 BCE)** invaded **Kalinga (ancient Odisha) in 261 BCE**, leading him to embrace **Buddhism**.
- Ashoka played a crucial role in **spreading Buddhism** to: Sri Lanka, Central Asia and Southeast Asia.
- **Buddhism's Role in Kalinga (Odisha)**
  - **Kalinga had strong trade links** with Southeast Asia, helping in the **popularization of Buddhism**.
  - **Tapassu and Bhallika**, the first two disciples of Buddha, are believed to have originated from **Utkala (another ancient name for Odisha)**.
  - Key **trade items** exchanged between Kalinga and Southeast Asia included: Pepper, cinnamon, cardamom, silk, camphor, gold, and jewelry.
  - **Baliyatra Festival** (literally meaning "Voyage to Bali") is an annual seven-day festival that commemorates Kalinga's **2,000-year-old maritime and cultural connections** with:
    - Bali, Java, Sumatra, Borneo, Myanmar, and Sri Lanka.
- **Chinese traveler Hiuen Tsang (638-639 AD)** is believed to have visited Ratnagiri.

JHUMOIR BINANDINI DANCE

Context

Recently, over 8,000 artists from tea garden areas across Assam gathered to deliver a spectacular performance of the traditional Jhumoir dance.

About

- **Introduction**
  - Also known as **Jhumur**, this is a **traditional folk dance** performed by the **Adivasi tea tribes of Assam**.
  - It is primarily associated with the **harvest season**, marking joy and gratitude for a successful yield.
  - The dance is also performed during **weddings, community gatherings, and festivals**, making it an integral part of social celebrations.
- **Musical Accompaniment:**
  - The **Jhumoir Binandini Dance** is accompanied by traditional instruments such as:
    - **Madal** (a double-headed drum)
    - **Dhol** (a large drum)
    - **Taal** (cymbals)
    - **Flute** (bamboo wind instrument)
  - These instruments create a **rhythmic and lively musical backdrop**, enhancing the vibrancy of the dance.
- **Performance and Attire**
  - ***Dance Formation and Movements***
    - The dance is performed by **both men and women** in a **circular formation**, holding each other's waists.
    - It features **synchronized footwork, swaying movements, and expressive gestures**, symbolizing joy and unity.
    - The energy and coordination in the performance reflect the **community spirit and cultural pride** of the Adivasi tea tribes.
  - ***Traditional Attire***
    - **Women** wear **colorful sarees**, often with vibrant patterns and traditional designs.
    - **Men** dress in **dhoti and kurta**, complementing the festive atmosphere.
    - The attire is often accessorized with **traditional jewelry and headgear**, adding to the aesthetic appeal of the performance.
- **Cultural Significance**
  - **Symbol of Inclusivity and Unity**: The dance embodies the **harmonious cultural blend** of Assam's diverse communities.
  - **Expression of Identity and Heritage**: It serves as a vital medium for **social bonding** and **cultural storytelling** among the Adivasi tea tribes.
  - **Preservation of Folk Traditions**: Jhumoir Binandini Dance helps sustain **indigenous art forms**, passing down traditions through generations.

LEPAKSHI TEMPLE

Context

Recently, historians urged the government to take measures for the inclusion of the Lepakshi Temple in the UNESCO World Heritage list.

About

- **Location**
  - The **Sri Veerabhadra Temple**, also known as **Lepakshi Temple**, is situated in **Lepakshi Village**, named after its **main shrine dedicated to Veerabhadra**, a fierce incarnation of Lord Shiva.

- Inscriptions on the **prakara (enclosure) walls** mention the village as **Lepaksha, Lepakshi, and Lepakshipura**.
- The name **Lepakshi** is derived from **Lepa (embalmed) + Akshi (eye)**, meaning **"painted eye"**, though its exact origin remains uncertain due to multiple interpretations.

➲ **Historical Overview**

- According to **Ramayana**, the injured **Jatayu** fell here while trying to rescue Sita from Ravana.
  - When Lord Rama arrived, he compassionately said, **"Le Pakshi" (Arise, bird)** in Telugu, giving the village its name.
- The discovery of **Ashokan Rock Edicts** at **Yerragudi** (in the same district) and nearby sites like **Siddhapur, Jatinga Rameshwaram, and Brahmagiri** suggests that the region was under **Mauryan rule in the 3rd century BCE**.
- ***Over time, the region was ruled by:***
  - Satavahanas
  - Chutus
  - Gangas
  - Chalukyas of Badami
  - Nolambas (until the 10th century CE)
  - Chalukyas of Kalyani
  - **Hoysalas (till the 13th century CE)**
  - **Vijayanagara Empire (from 1346 CE onwards)** when **King Harihara** constructed a fort at **Penugonda**, marking Vijayanagara's rule.

➲ **Architectural Development:** The temple evolved through **three architectural phases (1100-1800 CE)**:

- ***1100-1350 CE (Early Phase)***
  - Development of **pillars, pilasters, and niches**, influenced by **Late Chola, Pandya, Hoysala, and early Vijayanagara styles**.
  - No inscriptions confirm the exact history of this period.
- ***1350-1600 CE (Vijayanagara Expansion):*** The most significant construction phase, with the addition of:
  - Multiple shrines and mandapas (pillared halls).
  - **Multi-pillared mandapas** showcasing Vijayanagara's mature architectural style.
- The temple reached its peak under **King Achyutaraya (1529-1542 CE)**.
  - **1600-1800 CE** (Late Phase)
  - Minor additions, but no major structural developments.

➲ **Temple Complex and Layout**

- The temple is situated on a **low granite hill, Kurmasaila (Tortoise-shaped hill)**, enclosed by **three concentric prakara walls**, built during different phases.
- It is believed that there were originally **seven enclosure walls**, similar to **Hampi**, as **seven is a sacred number** in Indian tradition.
- **Trikuta-style temple** (Three Shrines)
  - **Veerabhadra** and **Papanaseswara** shrines were built on a **shared platform** with a **maha-mandapa (great hall)**.
  - A third shrine, **Raghunatha**, was later added to the **west of the same platform**.
- **Mandapas (Pillared Halls)**
  - **Natya Mandapa (Dance Hall)**: The most elaborate structure, attached to the **Maha Mandapa**, adorned with **murals depicting scenes from Ramayana and Mahabharata**.
  - **Kalyana Mandapa (Wedding Hall)**: Enclosed within the **second prakara**, it includes a **Balipitha (sacrificial altar), Vahana Mandapa (vehicle hall), and Homa Mandapa (ritual hall)**.
  - **Somavara Mandapa, Yaga Mandapa, and Uyalamandapa**: Built within the **third prakara**, which covers **2.5 times** the area of the second enclosure.
- **Sculptural Highlights**
  - **Monolithic Nandi (Bull)**: A massive **granite sculpture**, facing the **Naga Linga (serpent-covered Shiva Lingam)** inside the temple.
  - **Seven-hooded Naga Linga**: Carved from a **single stone**, located in the **second enclosure**.
  - **Ganesa Mandapa**: A **monolithic Ganesha Lingam** worshipped by a **spider and an elephant**.
  - **Massive stone footprint**, believed to be **Sita's**, is engraved on the temple floor.

➲ **Murals and Frescoes**

- **Paintings** at Lepakshi are among the finest of the **Vijayanagara period**, supported by **Krishnadevaraya and Achyutaraya**.
- The technique used is **Fresco-secco (painting on a lime-plastered surface)**.
- **Themes include:**
  - Ramayana and Mahabharata episodes.
  - Parvati's marriage, Kiratarjuniyam, Draupadi's Swayamvara.
  - Various forms of Shiva and Vishnu.
  - Legends of Virupanna and his brothers worshipping Veerabhadra.
- After the **Vijayanagara Empire's fall**, the paintings were neglected, leading to **damage and deterioration**.

➲ **Epigraphic Evidence**

- Around **20 inscriptions** are engraved on the **prakara walls**.
- Most inscriptions belong to the reign of **Achyutaraya (1539-42 CE)**, providing valuable insights into:
  - Temple construction and evolution.
  - Donations and patronage in different periods.
  - Religious and social activities.

➲ **Water Cistern (Kalyani)**

- A **rock-excavated oblong-shaped water reservoir** is situated on the **western side of the prakara**, next to **Uyalamandapa**.
- Similar **water cisterns** exist in **Hampi**, indicating a common Vijayanagara water management system.

10 MISCELLANEOUS

TIME'S WOMEN OF THE YEAR 2025 LIST

Context

A biologist from Assam, Purnima Devi Barman, was featured on the Time's Women Of The Year 2025 list.

About

- Purnima Devi Barman is the **only Indian woman on Time's 2025 Women of the Year list.** The list includes notable women such as actress Nicole Kidman and Gisele Pelicot, a survivor of sexual violence who became an advocate for the cause.
- In 2007, Barman's intervened to save a tree home to **Greater Adjutant Storks** in Assam, inspired by the birds' vulnerability.
  - She founded the **Hargila Army,** a group of 20,000 women who protect the **storks' nests and educate about their conservation.**
  - The population of greater adjutant storks in Assam grew from **450 in 2007 to over 1,800 in 2023,** with the **bird's conservation status** improved from **"endangered" to "near threatened."**
- Time's Women of the Year is an **annual recognition by Time magazine** that highlights women making significant changes in the face of challenges like gender violence, climate issues, and women's rights.

Key Facts About the Greater Adjutant Stork	
Scientific Name	*Leptoptilos dubius*
Family	Ciconiidae (Stork family)
Habitat	Wetlands, floodplains, and garbage dumps in **India, Nepal, and Cambodia**.
Distribution	Primarily found in **Assam (India) and Cambodia**, with smaller populations in Bihar (India) and Nepal.
Conservation Status	**Near threatened** (IUCN Red List)

SAROIJINI NAIDU

Context

Recently, India observed Sarojini Naidu's birth anniversary on February 13 as National Women's Day, commemorating her 146th birth anniversary in 2025.

About

- **Background**
  - Born on **February 13, 1879**, in **Hyderabad**, Sarojini Naidu was a **poet, activist, and politician**.
  - She joined the **Indian national movement in 1905**, influenced by the **Partition of Bengal**.
  - For her service during the **plague epidemic**, the British government awarded her the **'Kaisar-i-Hind' Medal**.
- **Role in the Indian Freedom Movement**
  - ***First Indian Woman President of INC***
    - Elected as the **first Indian woman president** of the **Indian National Congress (INC)** in **1925 (Kanpur Session)**.
    - Annie Besant was the **first woman president** in **1917**.
  - ***Participation in the Non-Cooperation Movement***
    - Actively joined Gandhi's **Non-Cooperation Movement (1920)**, promoting nonviolent resistance.
    - Arrested multiple times for her **anti-colonial activism**.
  - ***Leadership in the Salt Satyagraha (1930)***
    - Selected by **Mahatma Gandhi** to **lead the Salt Satyagraha** against the British **salt monopoly**.
    - On **May 21, 1930**, she led **2,500 marchers** to **Dharasana Salt Works**, facing violent British resistance.
  - ***Role in the Quit India Movement (1942)***
    - Arrested during the **Quit India Movement** and jailed for **21 months** alongside Gandhi.
- **Contributions as a Politician**
  - ***Round Table Conference (1931):*** Accompanied **Gandhiji to London** for the **Second Round Table Conference**, which sought British-Indian cooperation.
  - ***First Woman Governor of Independent India:*** After **India's independence**, she became the **first woman Governor of Uttar Pradesh (1947-1949)**.
- **Renowned Poet**
  - Sarojini Naidu earned the title **'Nightingale of India'** due to her poetic brilliance.
  - **Her famous works include:**
    - The Golden Threshold (1905)
    - The Bird of Time (1912)
    - The Broken Wing (1912)
    - In the Bazaars of Hyderabad (one of her most celebrated poems)
- **Death & Legacy**
  - Passed away on **March 2, 1949**, in **Lucknow, Uttar Pradesh**.
  - Remembered as a **fearless freedom fighter, inspiring poet, and champion of women's rights**.

11 DATA RECAP

- **Article 324 of the Constitution:** It states that the Election Commission will comprise the Chief Election Commissioner (CEC) and such number of Election Commissioners (ECs), as **the President may decide.**
- **Appointment of CEC**: The President appoints the CEC and ECs by warrant under his hand and seal.
  - The appointment is based on the recommendation of a Selection Committee comprising: The Prime Minister (Chairperson), The Leader of Opposition in the Lok Sabha and a Union Cabinet Minister nominated by the Prime Minister.
- **Various Committees Recommendations**
  - **Sarkaria Commission (1988)** – The Governor should **reserve a bill for the President's consideration only in rare cases** and must generally follow ministerial advice.
- **SC judgments on Governor:**
  - **Shamsher Singh Case (1974)** – The Supreme Court ruled that the **Governor must act on the advice of the Council of Ministers** in most cases.
  - **Rameshwar Prasad Case (2006)** – The court held that a **Governor's refusal to give assent can be challenged in court** and overturned if found unconstitutional.
  - **Nabam Rebia Case (2016)** – Affirmed that the **Governor's discretionary powers are subject to judicial review**, preventing arbitrary decision-making.
- **Status of Devolution to Panchayats in State Report, 2024:** The devolution to rural local bodies increased from 39.9% in 2013-14 to 43.9% in 2021-22.
- **Financial Dependence of PRIs:**
  - PRIs generate only **1% of their revenue through local taxes**, highlighting their heavy dependence on external funding sources.
  - **Reliance on Grants:** Nearly **80% of PRI revenue** comes from Central government grants, while **15%** is contributed by State government grants.
  - **Revenue Per Panchayat:** On average, a Panchayat generates **₹21,000 from its taxes** and **₹73,000 from non-tax sources** annually.
- **SC Judgements on President Rule:**
  - **SR Bommai Case (1994):** The Supreme Court ruled that Article 356 is subject to judicial review, and a state government can only be dismissed based on a floor test, not merely on the Governor's recommendation.
  - **Sarbananda Sonowal Case (2005):** The **scope of Article 355 was expanded**, allowing the **Union government to take broader actions** to ensure states function in accordance with the Constitution.
  - **Rameshwar Prasad Case (2006):** The dissolution of the Bihar Assembly without a floor test was deemed unconstitutional, with the SC criticizing the political misuse of Article 356.
- **IND-US relation:**
  - In FY24, the bilateral trade between India and the US stood at a record US$ 118.2 billion as against US$ 128.78 billion in FY22.
  - In FY24, India had a trade surplus of US$ 36.8 billion with the US.
  - Of the total trade in FY24, Indian exports to the US stood at US$ 77.5 billion, while American exports to India stood at US$ 40.7 billion.
  - USA is the **3rd largest investor** in India with cumulative **FDI inflows of US$ 67.76** billion from April 2000-September 2024.
- **IND-FRANCE Relations:**
  - Bilateral trade reached **$13.4 billion in 2022-23**, with France among **India's largest investors**, contributing **$659.77 million in FDI**.
  - Over **1,000 French companies operate in India**, while **150 Indian businesses have a presence in France**.
  - **Akasa Air Deal:** Both the nations signed a $5 billion agreement for over 300 LEAP-1B engines for its fleet of 170 Boeing MAX aircraft.
- **R&D Sector:**
  - **Low Budget Allocation:** India's **R&D expenditure is among the lowest globally, at just 0.6%-0.7% of GDP**.
  - This is significantly lower than major economies such as the **U.S. (2.8%), China (2.1%), Israel (4.3%), and South Korea (4.2%)**, limiting large-scale innovation.
  - In **2020, India had only 260 researchers per million inhabitants**, compared to **1,602 in China**, highlighting a significant gap in scientific manpower.
  - In **2021-22, total Ph.D. enrollment stood at only 2.12 lakh**, reflecting limited participation in high-level research.
- **Sovereign Green Bonds:** Since 2022-23, India has issued SGrBs eight times, raising nearly Rs 53,000 crore.
- **Textile Sector:** India is the sixth-largest exporter of textiles globally, contributing 8.21% to the country's total exports in 2023-24.
  - The sector holds a 4.5% share in global trade, with the United States and European Union accounting for 47% of India's textile and apparel exports.
  - The industry provides direct employment to over 45 million people.

Test Yourself

Objective Questions

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Mains Questions

GS PAPER-I

1. Discuss the administrative and military strategies of Chhatrapati Shivaji Maharaj that contributed to the establishment of the Maratha Empire. ***(10 Marks, 150 Words)***

2. Critically analyze the causes and consequences of the Battle of Plassey (1757) and its impact on British colonial expansion in India. ***(15 Marks, 250 Words)***

3. Discuss the challenges posed by shallow-focus earthquakes in densely populated urban areas of India. Suggest strategies for enhancing seismic resilience and disaster preparedness. ***(10 Marks, 150 Words)***

4. Examine the prospects and challenges of potash mining in India and its significance for ensuring self-sufficiency in fertilizer production. ***(15 Marks, 250 Words)***

5. Examine the objectives and challenges of the Three-Language Policy in India and its implications for social integration and linguistic diversity. ***(10 Marks, 150 Words)***

GS PAPER-II

6. Examine the procedure for the appointment of the Chief Election Commissioner (CEC) of India and discuss the associated challenges and reforms needed. ***(15 Marks, 250 Words)***

7. Critically examine the constitutional role of the Governor in India, highlighting issues related to discretionary powers and federalism. ***(10 Marks, 150 Words)***

8. Analyze the effectiveness of existing laws governing social media in India in balancing freedom of expression and the need for regulation. ***(15 Marks, 250 Words)***

9. Discuss the role of Panchayats in promoting grassroots democracy and socio-economic development in rural India. ***(10 Marks, 150 Words)***

10. Examine the constitutional provisions and implications of President's Rule in India, highlighting its impact on federalism and governance. ***(15 Marks, 250 Words)***

11. Critically analyze the evolving dynamics of India-US relations in the context of strategic, economic, and defense cooperation. ***(15 Marks, 250 Words)***

12. Examine the significance of India-France relations in strategic, economic, and cultural domains, highlighting recent developments and future prospects. ***(10 Marks, 150 Words)***

GS PAPER-III

13. Discuss the key differences between a Regular Budget and an Interim Budget in India. How do they impact fiscal planning and policy implementation? ***(15 Marks, 250 Words)***

14. Discuss the concept of Gross Domestic Knowledge Product (GDKP) and its potential impact on measuring a knowledge-based economy. ***(15 Marks, 250 Words)***

15. Analyze the reasons behind India's rising LNG imports, their economic implications, and the challenges faced in ensuring energy security. ***(10 Marks, 150 Words)***

16. Discuss the challenges and strategies for achieving India's solar power capacity targets, considering technological, financial, and policy dimensions. ***(10 Marks, 150 Words)***

17. Critically analyze the various types of Artificial Intelligence and their potential impact on governance and socio-economic development in India. ***(15 Marks, 250 Words)***

18. Examine the challenges associated with the safety and management of nuclear reactors in India. Suggest measures to ensure sustainable and secure nuclear energy generation. ***(15 Marks, 250 Words)***

19. Examine the significance of the Environmental, Social, and Governance (ESG) framework in promoting sustainable business practices and responsible investments. ***(10 Marks, 150 Words)***

20. Discuss the objectives and significance of the International Big Cat Alliance (IBCA) in conserving endangered big cat species globally. **(10 Marks, 150 Words)**